DOCUMENT RESUME

ED 339 515 PS 020 128

TITLE	Lead Poisoning. Hearings before the Subcommittee on Health and the Environment of the Committee on Energy and Commerce. House of Representatives, One Hundred Second Congress, First Session (April 25 and July 26, 1991). Including H.R. 2840, a Bill To Amend the Public Health Service Act To Reduce Human Exposure to Lead in Residences, Schools for Young Children, and Day Care Centers, Including Exposure to Lead in Drinking Water.
INSTITUTION	Congress of the U.S., Washington, DC. House Committee on Energy and Commerce.
REPORT NO	ISBN-0-16-035696-2
PUB DATE	91
NOTE	676p.; Serial No. 102-28.
AVAILABLE FROM	U.S. Government Printing Office, Superintendent of Documents, Congressional Sales Office, Washington, DC 20402 (Stock No. 552-070-113-13-4, $19.00).
PUB TYPE	Legal/Legislative/Regulatory Materials (090)
EDRS PRICE	MF04/PC28 Plus Postage.
DESCRIPTORS	Child Development; *Child Health; *Drinking Water; *Environmental Standards; Federal Regulation; *Lead Poisoning; Pollution; Public Agencies; *Public Health
IDENTIFIERS	Congress 102nd; *Paint; Public Health Service Act

ABSTRACT

On April 25, 1991, a hearing examined the problem of lead poisoning and reviewed the actions taken by the Environmental Protection Agency and other agencies to address the problem. Many of those who gave testimony considered the actions to be inadequate. The detrimental effects of lead on human health, and especially children's health and development, were discussed. Paint and drinking water were identified as major sources of lead in the environment. On July 26, 1991, the subcommittee met again to hear testimony concerning H.R. 2840, a bill to amend the Public Health Service Act to reduce human exposure to lead in residences, schools for young children, and day care centers. The text of the bill is included in the document. During the course of the two hearings, testimony and prepared statements were received from at least 26 individuals and representatives of institutions and organizations concerned about lead poisoning. (BC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

LEAD POISONING

☐ This document has been reproduced as received from the person or organization originating it.
☒ Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED339515

HEARINGS

BEFORE THE

SUBCOMMITTEE ON
HEALTH AND THE ENVIRONMENT

OF THE

COMMITTEE ON
ENERGY AND COMMERCE
HOUSE OF REPRESENTATIVES

ONE HUNDRED SECOND CONGRESS

FIRST SESSION

INCLUDING

H.R. 2840

A BILL TO AMEND THE PUBLIC HEALTH SERVICE ACT TO REDUCE HUMAN EXPOSURE TO LEAD IN RESIDENCES, SCHOOLS FOR YOUNG CHILDREN, AND DAY CARE CENTERS, INCLUDING EXPOSURE TO LEAD IN DRINKING WATER

APRIL 25 AND JULY 26, 1991

Serial No. 102-28

Printed for the use of the Committee on Energy and Commerce

PS 020128

U.S. GOVERNMENT PRINTING OFFICE
47-045⇨ WASHINGTON : 1991

For sale by the U.S. Government Printing Office
Superintendent of Documents, Congressional Sales Office, Washington, DC 20402
ISBN 0-16-035696-2

BEST COPY AVAILABLE

COMMITTEE ON ENERGY AND COMMERCE

JOHN D. DINGELL, Michigan, *Chairman*

JAMES H. SCHEUER, New York
HENRY A. WAXMAN, California
PHILIP R. SHARP, Indiana
EDWARD J. MARKEY, Massachusetts
AL SWIFT, Washington
CARDISS COLLINS, Illinois
MIKE SYNAR, Oklahoma
W.J. "BILLY" TAUZIN, Louisiana
RON WYDEN, Oregon
RALPH M. HALL, Texas
DENNIS E. ECKART, Ohio
BILL RICHARDSON, New Mexico
JIM SLATTERY, Kansas
GERRY SIKORSKI, Minnesota
JOHN BRYANT, Texas
RICK BOUCHER, Virginia
JIM COOPER, Tennessee
TERRY L. BRUCE, Illinois
J. ROY ROWLAND, Georgia
THOMAS J. MANTON, New York
EDOLPHUS TOWNS, New York
C. THOMAS McMILLEN, Maryland
GERRY E. STUDDS, Massachusetts
PETER H. KOSTMAYER, Pennsylvania
RICHARD H. LEHMAN, California
CLAUDE HARRIS, Alabama

NORMAN F. LENT, New York
CARLOS J. MOORHEAD, California
MATTHEW J. RINALDO, New Jersey
WILLIAM E. DANNEMEYER, California
DON RITTER, Pennsylvania
THOMAS J. BLILEY, Jr., Virginia
JACK FIELDS, Texas
MICHAEL G. OXLEY, Ohio
MICHAEL BILIRAKIS, Florida
DAN SCHAEFER, Colorado
JOE BARTON, Texas
SONNY CALLAHAN, Alabama
ALEX McMILLAN, North Carolina
J. DENNIS HASTERT, Illinois
CLYDE C. HOLLOWAY, Louisiana
FRED UPTON, Michigan

John S. Orlando, *Chief of Staff*
John M. Clough, Jr., *Staff Director*
Margaret A. Durbin, *Minority Chief Counsel/Staff Director*

SUBCOMMITTEE ON HEALTH AND THE ENVIRONMENT

HENRY A. WAXMAN, California, *Chairman*

GERRY SIKORSKI, Minnesota
TERRY L. BRUCE, Illinois
J. ROY ROWLAND, Georgia
EDOLPHUS TOWNS, New York
GERRY E. STUDDS, Massachusetts
PETER H. KOSTMAYER, Pennsylvania
JAMES H. SCHEUER, New York
MIKE SYNAR, Oklahoma
RON WYDEN, Oregon
RALPH M. HALL, Texas
BILL RICHARDSON, New Mexico
JOHN BRYANT, Texas
JOHN D. DINGELL, Michigan
(Ex Officio)

WILLIAM E. DANNEMEYER, California
THOMAS J. BLILEY, Jr., Virginia
JACK FIELDS, Texas
MICHAEL BILIRAKIS, Florida
ALEX McMILLAN, North Carolina
J. DENNIS HASTERT, Illinois
CLYDE C. HOLLOWAY, Louisiana
NORMAN F. LENT, New York
(Ex Officio)

Karen Nelson, *Staff Director*
Gregory S. Wetstone, *Counsel*
Phillip Barnett, *Counsel*
Charles Ingebretson, *Minority Counsel*

CONTENTS

Hearings held on: Page

April 25, 1991 1
July 26, 1991 309
Text of H.R. 2840 312

Testimony of:

Fandel, June and Krystle, Roslindale, Mass 13
Fisher, Linda J., Assistant Administrator, Office of Pesticides and Toxic Substances, Environmental Protection Agency 48
Florina, Karen, senior attorney, Environmental Defense Fund 203
Gloriod, Terry, chairman, Water Technology Committee, National Association of Water Cos 567
Gorman, Edward J., III, associate general counsel, United Brotherhood of Carpenters and Joiners of America 262, 493
Graef, John W., on behalf of American Academy of Pediatrics 9
Hanson, Douglas M., president, WaterTest Corporation of America 461
Hiscock, William, chief, program initiatives branch, Medicaid bureau, Health Care Finance Administration 73
Houk, Vernon N., Assistant Surgeon General, Director, National Center for Environmental Health and Injury Control, Centers for Disease Control 22, 420
Jackson, Rudolph E., on behalf of Alliance to End Childhood Lead Poisoning 510
Jones, Richard, on behalf of National Apartment Association 497
McMullen, L.D., chairman, legislative committee, Association of Metropolitan Water Agencies 546
Needleman, Herbert L., professor of psychiatry and pediatrics, University of Pittsburgh School of Medicine 439
Olson, Erik D., counsel, environmental quality division, National Wildlife Federation 287, 525
Packer, Joel, legislative specialist, National Education Association 175
Parrish, William F., Jr., on behalf of Association of State Drinking Water Administrators 556
Prenney, Brad, director of childhood lead poisoning prevention program, Massachusetts Department of Public Health 78
Rafel, Vicki, volunteer, National Parent-Teacher Association 156
Ringen, Knut, executive director, Laborers' Health and Safety Fund of North America 245
Rosen, John F., professor of pediatrics, Montifiore Medical Center, Albert Einstein College of Medicine 74
Ryan, Don, executive director, Alliance to End Childhood Lead Poisoning 191
Silbergeld, Ellen K., senior scientist, Environmental Defense Fund 130, 445
Silbergeld, Mark, director, Consumers Union 231
Stern, June, on behalf of National Education Association and the National Parent-Teacher Association 475
Wennberg, Jeffrey, on behalf of National League of Cities 563
Wickser, James S., on behalf of Association of Metropolitan Water Agencies 278

4

Material submitted for the record by:

Page
American Supply Association, statement 586
Cardin, Hon. Benjamin, a Representative in Congress from the State of Maryland, statement 583
Chicago, city of, statement 589
Coalition for Safe Ceramicware, statement 592
Environmental Protection Agency, statement 599
International Crystal Federation, letter to Mr. Waxman dated August 16, 1991, comment on section 5 of H.R. 2840 615
Laborers' Health and Safety Fund of North America, statement 621
National Association of Realtors, statement 641
National Food Processors Association, statement 659
Recyclers of Copper Alloy Products, statement 662

LEAD POISONING

THURSDAY, APRIL 25, 1991

House of Representatives,
Committee on Energy and Commerce,
Subcommittee on Health and the Environment,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10:20 a.m., in room 2123, Rayburn House Office Building, Hon. Henry A. Waxman (chairman) presiding.

Mr. **Waxman**. The meeting of the subcommittee will come to order.

I'd like to welcome everyone to this hearing today.

Today's hearing is our second focusing on indoor environment. We will address a grave and pervasive health threat that is eating away at this Nation's greatest resource, the minds of our children.

The threat is the potent neurotoxin lead. Millions of American children are exposed to dangerous levels of lead in old paint and contaminated drinking water and numerous other sources. Lead poisoning is the most common and societally devastating environmental disease of young children according to the Centers for Disease Control.

Even as we are engaged in a national debate over how to improve education we are needlessly wasting the brainpower of our youth. One American child in six is afflicted by blood levels high enough to impair intellectual and neurological development. In most cases these children are unwittingly poisoned in their own homes by exposure to lead paint and lead in drinking water.

This week health experts advising the Centers for Disease Control recommended that the threshold for lead poisoning be lowered by 60 percent. This change increases dramatically the number of children suffering from lead poisoning from 1 percent of the Nation's children under the old standard to a staggering 15 percent under the new standard.

There is human tragedy behind the numbing statistics on lead. Childhood exposure to lead can impair learning ability, retard the development of language skills, create serious behavioral disorders and even stunt physical growth.

Studies indicate that children with high levels of lead are seven times more likely to drop out of high school and six times more likely to have learning disabilities.

Testimony today will describe a new and particularly insidious aspect of this problem: the effects of lead on fetuses.

Fetuses can suffer lead poisoning as a result of the mother's exposure to lead. A lifetime's worth of lead exposure is stored in the bones of adults. We now know that this lead can be released during the pregnancy leading to miscarriages or retarded neurological development in the fetus itself.

Lead paint is the source of many of the most serious exposures. It was outlawed for residential uses in 1978 but it's still in place in over 50 million homes. EPA estimates that at this moment 2 million children have been poisoned by lead paint.

A great deal can be done to reduce exposure to lead paint. As documented in the CDC report, the central step is abatement of lead-based paint from older housing. We need testing and disclosure requirements, better lead screening programs and worker training and certification. The State of Massachusetts, which will be testifying today, has adopted many of these measures.

Unfortunately, the Environmental Protection Agency is not taking these steps. Instead, it will spend just $4 million, less than one-tenth of 1 percent of its budget to study lead paint issues further.

The other major lead source is of course drinking water. The contamination of drinking water is the single most pervasive source of lead exposure in this country, afflicting 30 million of the Nation's children. The contamination comes from lead drinking water distribution pipes and home plumbing and it is entirely avoidable.

EPA's failure to deal with this problem under the Safe Drinking Water Act is a national disgrace. Fifteen years ago the National Academy of Sciences recommended that EPA cut in half the permissible level of lead in drinking water. In 1986 a frustrated Congress mandated that EPA revise the lead standard for drinking water within 3 years but the Agency has continued to delay. Now almost 2 years after the statutory deadline, EPA is at last under court order to revise the lead standard by the end of this month, within a few days of this hearing.

Incredibly, this action will be of little help and may even make matters worse. The Agency now intends to eliminate entirely the tap water standard for lead. The Agency will replace the standard with a treatment technique requirement. This new regime leaves us with no enforceable limit on the level of acceptable lead contamination in drinking water. Children could legally be exposed to lead levels even higher than the current standard.

Compounding the problem of lead exposure is the small scope of Federal programs for screening and treatment of lead poisoning in children. In 1988 this committee recreated the Childhood Lead Poisoning Program at the Centers for Disease Control. That program has received the most nominal support for funding. Relatedly, the President's budget for 1992 proposes doubling the current effort to $15 million, but even that effort will reach only two dozen of the worst sites, leaving most cities and States with no Federal funds.

Moreover, the Medicaid's program guaranteeing treatment for lead poisoning has been broken in most places in this country. Under current law, a State Medicaid program must provide screening and care for lead. Any State that does not may lose its Federal matching payment. Unfortunately some States are shortchanging these programs and failing to treat lead poisoned children. Litigation has been necessary to correct these failings and meanwhile children become disabled and the opportunity for prevention has long passed.

We can't continue such negligence. The time has come for the Federal government to change course and move aggressively to eliminate lead contamination of drinking water, to initiate a program to abate lead-based paint in homes and to broaden lead screening and prevention programs.

This morning we have an excellent group of witnesses to provide testimony on this problem and the need for such actions.

I want to welcome all of them and I want to thank everyone who has come this morning to participate in this hearing.

Before calling on our witnesses, I do want to recognize members of the subcommittee for their opening statements and call Mr. Dannemeyer first.

Mr. **Dannemeyer**. Thank you, Mr. Chairman.

I understand we're going to hear this morning from CDC on the prospect of reducing the level of lead that would be tolerated in terms of a standard that would be toxic to humans and I'll look forward to that testimony.

I think it is also important as we go through a hearing of this type that we focus on getting the science ahead of the politics. I am not suggesting that politics is a part of this hearing but when we look back on what we did with the amendments to the Clean Air Act last year we found that the politics was far ahead of the science in what we did with the problem of acid rain.

We also know that the Alar scare statistically speaking we citizens have a greater risk of harm riding in an automobile to a grocery store to buy an apple than we do eating an apple sprayed with Alar. That's the science. That's not the politics.

I am not attempting to minimize the significant adverse health risk to humans from consuming lead. If the science says it's harmful then we need standards. If the standards need to be lowered and the science says that, and there is a consensus in the scientific community to do that, then that is what we need to do because nobody in this country wants to see any person, adult, child or otherwise, harmed from the consumption of a product that many of us believe is necessary, such as water or food.

I am a little saddened that no witnesses from industry have been invited to come to this hearing this morning. I think that they could have supplied some balance and hopefully at a future time representatives from the industry that utilizes lead in our economy will have an opportunity to come and testify.

I think it also would have been appropriate for a representative of HUD to have been called to testify today. They maybe have—I think they would have something to add because housing is an important element in the environment in which we live. If we are going to be adopting or moving to a policy for instance suggesting to the American public that the plumbing in their homes has to be removed and replaced by another form or pipes so as to provide a water source free of lead, I think it is important that the American public understand what the risks are involved because that calls to mind something I have learned in life. In the next world, whenever that comes, if you believe in reincarnation, I've always said I wanted to be a plumber and the reason I say that is because plumbers have a way of really getting to we consumers when they want to repair our houses.

Thank you very much, Mr. Chairman.

Mr. **Waxman**. Thank you very much, Mr. Dannemeyer.

You will be interested to know that the Association of Metropolitan Water Agencies, which is the industry group, is going to be testifying on that last panel.

Mr. Richardson, I think you were here first among the three witnesses. Is that not correct? Mr. Richardson, I would like to hear from you in your opening statement.

Mr. **Richardson**. Thank you, Mr. Chairman.

I would like to commend you for holding this hearing and focusing on this important issue. Obviously, we have children at risk; we have a need for a more proactive policy.

I especially want to commend Congressman Wyden and Congressman Sikorski for their leadership on this issue, and my good friend Jim Scheuer, who have been leaders in this area along with you.

Mr. Chairman, again, I thank you very much.

Mr. **Waxman**. Thank you, Mr. Richardson.

Mr. Sikorski.

Mr. **Sikorski**. Thank you, Mr. Chairman.

Lead has been identified by the American Academy of Pediatrics as the most serious topological threat to America's children. That is the science. That is the expertise.

Millions of America's young children suffer long-term neurological and developmental disorders associated with high blood lead levels. Pregnant women, unborn children, Mr. Dannemeyer, are at special risk. Four hundred thousand babies are born each year with high blood lead levels.

Lead poisoning is directly related to school failure, reading disabilities, attention deficits, and hyperactivity. There is a direct correlation between lead poisoning and criminal activity and social failure. This crippler of young minds and bodies rivals the proliferation of mind-numbing drugs in our schools, but there is no local dealer to blame. You cannot just say no. We can blame only the water fountains, the batteries, painted walls, and apathy.

So what is the Federal response? Well, we are forming all kinds of cross-Agency task forces, interagency clusters, subcommittees, and working groups on lead. The administration has held joint press conferences and heralded its plans to deal with this terrible threat. It has announced that the alphabet Agencies are ready to march. Strategic plans for the elimination of childhood lead poisoning, HHS; strategies for reducing lead exposures, EPA; plans for abatement of lead paint, HUD. We're coordinating, or caucusing, strategizing, planning, ruminating, researching, and considering. The rhetoric has never, ever been better.

Unfortunately, the funding does not match the rhetoric. The relatively minute commitment of resources is insufficient to deal with the magnitude of threat. The CDC concluded, "lead poisoning is the most common and societally devastating environmental disease of young children." This is the Centers for Disease Control, Mr. Dannemeyer. "Lead poisoning is the most common and societally devastating environmental disease of young children." Yet, the administration is only proposing very little to help States and schools and cities to screen our children for lead.

This is somewhat personal to me. With the encouragement and generous support of Chairman Waxman's subcommittee staff, and the vigorous opposition of the administration, I authored the Lead Contamination Control Act of 1988 to protect our kids, one of the most vulnerable and easy to reach groups, by removing lead in school drinking water and testing kids for elevated blood levels.

I am pleased the administration has finally recognized the problem of lead poisoning in our kids must be dealt with comprehensively and stopped fighting us on the threat, it is continuing to fight us on the contaminant levels. I am also pleased that the elements of the Lead Contamination Control Act have been incorporated in both HHS and EPA's strategic plans, I am disheartened and a little angry at two things: the continued opposition by the administration on the contaminant level, and this idea of developing a technique that will somehow deal with the threat; and second, that the EPA has failed to effectively enforce the Contamination Control Act of 1988. You do not have to believe me, just look at the EPA IG's own assessment, not mine.

I do agree that the Contamination Control Act needs to be strengthened. It would have been a lot stronger 3 years ago, and since, if we had not had the opposition of the administration.

I intend to carefully review the testimony from the hearing, and in the next few weeks I will introduce a tougher, expanded reauthorization of the Lead Contamination Control Act.

I want to thank you, Mr. Chairman, for your work on lead prevention, and continued efforts and hard efforts and that of the excellent staff. I look forward to the testimony.

I just want to leave one thought, and I have to apologize for leaving. I am flying back to Minnesota for a commitment there.

Most of us, if given the chance, would prefer that if there were injury to our kids or ourselves, we would take it on ourselves. Most of us, if given an opportunity, a choice between injury to our brain, our mind, or our body, we would take it on our body. That sums up the terrible nature of lead contamination. It threatens adults, but it goes after the kids much worse. It cripples the body, but it really goes after their mental development and their IQ's.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Sikorski follows:]

PREPARED STATEMENT OF HON. GERRY SIKORSKI

Lead has been identified by the American Academy of Pediatrics, as the most serious toxicological threat to America's children. Millions of America's young children suffer long-term neurological and developmental disorders associated with high blood lead levels. Pregnant women and unborn children are at special risk—400,000 babies are born each year with high blood lead levels. Lead poisoning is directly related to school failure, reading disabilities, attention deficits, and hyperactivity. There is a direct correlation between lead poisoning and criminal activity and school failure. This crippler of young minds and bodies rivals the proliferation of mind numbing drugs in our schools, but there is no local dealer to blame: just water fountains, batteries, and painted walls and apathy. And as we've seen from our Children, Youth and Families hearing, we're not just talking about lead poisoning affecting a few poor members of our society, the less educated and marginal students. We're talking all Americans and we're talking American competitiveness.

We're talking about the loss of a couple million of super Americans—geniuses who may very well hold the key to solving many of the problems of today and the future.

Those of you in this room probably know the statistics. But, I'll enter them for the record and keep repeating them until we can say we've significantly reduced the number of American kids who are shorter, dumber and more hyperactive because of lead poisoning.

Because our children remain at risk: Forty-two million Americans, including 3.8 million children under the age of six, drink water that exceeds the EPA's old, too high lead standard; every year, a quarter of a million American kids suffer an IQ loss due to lead in their drinking water and that number will skyrocket when the MCL is decreased; 82,000 children risk growth impairment—their bodies; and another 82,000 risk impaired blood cell formation—their health; 17 percent of all children, more than three million under the age of seven have levels of lead that are neurotoxic; and one in eleven of America's children under age 6—1.5 million children—have blood lead levels that meet the U.S. Centers for Disease Control's [CDC] definition of acute lead poisoning.

So what is the Federal response to the lead threat?

We're forming cross-agency task forces, interagency clusters, subcommittees, and working groups on lead. The Administration has held joint press conferences and heralded its plans to deal with this terrible threat. The alphabet agencies are ready to march: The Administration has announced strategic plans for the elimination of childhood lead poisoning [HHS] and strategies for reducing lead exposures [EPA], and plans for abatement of lead paint [HUD]. We're coordinating, caucusing, strategizing, planning, ruminating, researching and considering. The rhetoric has never been better. Unfortunately, the funding doesn't match the rhetoric. The relatively minute commitment of resources is insufficient to deal with the magnitude of the threat, The CDC concluded that "Lead poisoning is the most common and societally devastating environmental disease of young children." Yet the Administration is only proposing very little to help states and schools and cities to screen our children for lead. It simply doesn't make sense. Despite growing evidence of lead's insidious and pervasive effect on our children we're still talking about paltry funding.

The Lead Contamination and Control Act

This is personal to me. With the encouragement and support of Chairman Waxman and the subcommittee staff—and the vigorous opposition of the Administration, I authored the Lead Contamination and Control Act [LCCA] of 1988, P.L. 100-572. LCCA sought to protect schoolchildren, one of the most vulnerable and easy to reach groups, by removing lead in school drinking water and testing children for elevated blood levels.

Specifically, the act directs the EPA to assist local educational agencies in their efforts to remove lead sources from schools. These efforts involve the replacement of lead-contaminated drinking water coolers and the identification and removal of other sources of lead in facilities controlled by these agencies. The Act also established a grant program under the Director of the Center for Disease Control to fund lead poisoning prevention programs. Those programs were to screen blood levels in infants and children, refer children at risk for treatment and environmental intervention, and provide public education on the risks of childhood lead poisoning. Priority was to be given to communities with high incidence of elevated blood levels in children.

Administration's Inaction on LCCA

While I am pleased the Administration has finally recognized the problem of lead poisoning our children must be dealt with comprehensively—and stopped fighting us on the threat—and pleased that elements of the Lead Contamination and Control Act have been incorporated in both FMS and EPA's "strategic" plans, I am disheartened and a little angry at 2 things: (1) that the EPA has not issued MCL, levels and (2) that the EPA has failed to effectively enforce the LCCA. That's according to the EPA IG's own assessment, not mine. Last fall, the EPA Inspector General affirmed that there was still much work to be done on LCCA. The IG concurred that EPA needs to do more to encourage schools to test for high levels of lead and work more aggressively to identify water coolers that are not lead free. As well as provide better public education efforts about the danger of lead in drinking water and tell Americans the truth about the dangers of lead in drinking water.

The EPA Administrator has told the Subcommittee that the EPA has "gone far beyond the requirements of the LCCA" in trying to reduce public exposure to lead in drinking water in schools. I disagree. Publishing guidances, testing protocols, and listing water coolers that are nonlead free is hardly above and beyond. Access to a video and a Drinking Water hotline that virtually no one knows about is not going to significantly reduce the threat of lead poisoning in our kids.

I do agree that the LCCA needs to be strengthened. The LCCA requires states to establish programs to assist schools in testing their water coolers, however out of the $90 million that has been authorized in this bill, not one single penny has been appropriated to take remedial action or help pay for testing. Furthermore, states need only take action to alleviate the lead contamination that is discovered. If there is no testing—no lead is discovered. What incentive do states have to test? If they test—they pay. If they don't test there is no penalty—except to America's kids. Congress must mandate the testing and appropriate accordingly.

I intend to carefully review the testimony from this hearing and in the next few weeks I will introduce a tougher, expanded reauthorization of the Lead Contamination and Control Act.

Thank you, Mr. Chairman for your work on lead prevention—and that of your excellent staff. I look forward to the testimony. I am particularly interested in the testimony about notification proposals for lead—a kind of Community Right to Know About Lead—for homebuyers and renters. I look forward to working with you on this issue.

Mr. **Waxman** Thank you, Mr. Sikorski.

Mr. Scheuer.

Mr. **Scheuer**. Thank you, Mr. Chairman, and I will be brief, because I know we want to listen to the witnesses.

I want to express my thanks to you for having this hearing, Mr. Chairman, and for your leadership on the lead issue. I wish to congratulate Mr. Sikorski for his fine work over the years, and Congressman Ron Wyden.

There has been a great deal of attention by a number of thoughtful Members of Congress on this issue, and it is high time we did something. There is a feeling out there that we have faced up to the problem and done something about it. This is not true. We have not. That we could be ignoring such a clear health hazard to our kids—from paint, pipes, wall toys—something that affects them to dramatically, in such a tragic way—decreased IQ, decreased attention span, coma, and death in some instances.

We have 4 million kids with lead poisoning. We have only tested 15 percent of all the kids. There is a disproportionate effect on minority kids, on their health, on their mental ability, on their capacity to work and study and be productive in our society. It is a disgrace, Mr. Chairman. Doing something about this is long overdue.

On April 11, I introduced H.R. 1750, the Lead Exposure Reduction Act of 1991. It is a companion to a bill that Senator Harry Reid just introduced in the Senate. It restricts the use of lead most likely to cause poisoning. It restricts it in paint, in pesticides, in plumbing fixtures, toys, game pieces, curtain weights, and so forth. It prohibits the use of lead solder by plumbers. It bans the use of lead completely in food packaging, and places further restrictions on the sale of leaded gasoline, and mandates the recycling of lead batteries.

Mr. Chairman, we should get on with it. There is enough wisdom and enough guts and enough determination to stop punishing our kids by this awful inattention, this awful disdain that we are showing in the field of lead, where the results are so painful and tragic it boggles the mind.

Let us get on with it and pass some legislation, and remediate this tragic, pitiful problem.

[The prepared statement of Mr. Scheuer follows:]

PREPARED STATEMENT OF HON. JAMES H. SCHEUER

Thank you. Mr. Chairman, lead poisoning is the most severe environmental threat to the health and well being of our children. Lead from paint, pipes, walls, and toys are poisoning our children every day. The fact is that children are vulnerable to lead and the poison causes irreversible brain damage, brain damage that will lead to a decreased IQ, decreased attention span and, in extreme cases, even coma and death.

Lead poisoning is a serious problem for all Americans. Over 15 percent of all children have elevated blood lead levels. That's 4 million kids. The problem is spread throughout the country. Up to one-half of urban minority children suffer from lead poisoning. Nearly 10 percent from the least susceptible demographic group suffer from the disease as well. No family is immune.

Each year the Congress deals with many different environmental problems, all serious, but none of them have such a disproportionate effect on children. Lead poisoning is the environmental problem with a child's face.

As serious a problem as lead poisoning is, only 10 percent of all children are tested. Lead poisoning takes its toll slowly over time, so if the problem is spotted early, something can be done. We can't reverse the damage that has already been done, but we could eliminate the source of the hazard before more damage is done.

There is a common misconception that we have tackled the lead problem. Well that is just plain wrong. Lead paint is still used in commercial buildings and on all sorts of outdoor structures like bridges and highways. We still pump over one billion gallons of leaded gasoline each year. We have not adequately addressed this problem, we must do more.

On April 11 I introduced H.R. 1750, the "Lead Exposure Reduction Act of 1991", a comprehensive bill to reduce lead poisoning in our society.

The bill is companion legislation to S-391 introduced by Senator Reid. It would: Restrict the uses of lead most likely to cause poisoning like paint, plumbing fixtures and fittings, pesticides, toys and games pieces, and curtain weights; prohibit the use of lead solder by plumbers; ban the use of lead completely in food packaging; place further restrictions on the sale of leaded gasoline; and mandate the recycling of lead batteries.

The bill also has product labeling requirements and provisions for research and data collection on lead poisoning. The bill contains some well thought out exceptions for products such as collectors items and artist supplies.

Mr. Chairman, before I close I just want to commend you for having this hearing and pay homage to two of my colleagues on the subcommittee who have been leaders in the fight against lead poisoning, Mr. Sikorski and Mr. Wyden. Gentlemen, you have done this country a great service by heightening the nation's awareness of this problem and pressuring the Congress to move forward.

Mr. WAXMAN. Thank you very much, Mr. Scheuer.

Let me ask unanimous consent that other members may have an opportunity, if they wish, to insert a statement in the record at this point in the hearing.

We are pleased to have for our first group of witnesses Dr. John Graef, who is associate in medicine, director of the lead and toxicology clinic at Children's Hospital; and June and Krystle Fandel are here from Massachusetts as well. We would like to ask you, if you would, to please come forward, and have seats at the table.

We are pleased to welcome you to our hearing this morning.

If you have presented prepared testimony in advance, we will have that all in the record, so you do not have to feel like you have to read it when you make your oral presentation.

We would request that the oral presentation be kept to around 5 minutes, because we have a long schedule of witnesses, and we want to give everybody a chance to talk.

We are pleased to have you here and we thank you very much for coming.

Dr. Graef, why do we not start with you.

STATEMENT OF JOHN W. GRAEF, ON BEHALF OF AMERICAN ACADEMY OF PEDIATRICS; ACCOMPANIED BY JUNE AND KRYSTLE FANDEL, ROSLINDALE, MASS.

Mr. GRAEF. Thank you, Mr. Chairman, members of the committee.

My name is John Graef, M.D. I am a pediatrician, with more than 20 years experience in the treatment of childhood lead poisoning. I am the chief of the lead and toxicology clinic at the Children's Hospital in Boston, and I am associate clinical professor of pediatrics at the Harvard Medical School. I also serve as consultant for the Centers for Disease Control and to the Massachusetts Childhood Lead Poisoning Prevention Program. In 1987, I was honored to receive the first Lead Poison Prevention Award of the Conservation Law Foundation.

I am here today representing the American Academy of Pediatrics and its 41,000 members who are dedicated to the health and well-being of infants and children. We express our strong support for an enlarged Federal effort to prevent lead poisoning—an entirely preventable disease.

Lead poisoning is an ancient disease, but this form of it, childhood lead poisoning, was first described in Australia by an Australian physician who discovered that a group of people developed kidney disease, and it was found that they had in common the ingestion of lead-based paint from their homes in Queensland, Australia. That was at the turn of the century.

In 1926, the story was put together by Dr. Guy McKhann of the Children's Hospital in Boston, who first described the association of the childhood form of this disease with the ingestion of lead-based paint chips.

By World War II, lead poisoning was the number one cause of death among children with poisonings of any kind. Eighty percent of children who presented to the hospital with symptomatic lead poisoning died of the disease. There was no treatment. By the middle 1950's, when lead was replaced with the cheaper titanium, it was thought that the problem was probably solved. What people forgot was that the lead paint does not decay. If we do not remove it, it remains in homes. In addition, the use of lead in gasoline turned out to have contributed significantly to the problem by creating contamination of household dust, soil, and air.

In addition, the problem of plumbing was observed to contribute significantly to background lead levels by the use of initially, lead pipes, and subsequently, soldered pipes, in which corrosive water coming through soldered pipes, which might have lead solder, which was inside the joints, contributed significantly to the ingestion of lead through common usage.

Lead can also be found, as you probably are aware, in foodstuffs, and a variety of relatively uncommon sources, such as cosmetics, ceramic pottery, and so forth.

Those kinds of uses do occur, and they do plague us from time to time, and the control of those uncommon sources is an important part of the regulatory capacity, both of the Congress and the Consumer Products Safety Commission, as well as FDA.

In 1943 and again in 1959, Dr. Randolph Beyers, who was professor of neurology at the Harvard Medical School and at the Children's Hospital, described for the first time the fact that even though children were treated for lead poisoning, they would ultimately suffer ill effects. The most important point that he made was not only that after having survived an episode of lead poisoning that a significant number of children would be badly damaged, but that if those children were reexposed to a lead hazard, the chances of their suffering significant neurological deficits was virtually certain.

Thus, the removal of the lead paint hazard from the environment of that child became the cornerstone of prevention as a primary requirement of an adequate prevention program.

In 1970, the State of Massachusetts as well as the Federal Government began to address this problem, and since that time, some progress has been made. However, for example, in Massachusetts alone, there are 1 million homes painted with lead-based paint. We have perhaps succeeded in deleading 50,000 of them, with one of the most aggressive deleading programs in the country. That leaves a mere 950,000 to go.

In addition, the fact that there are 40 million homes built before 1960 in the United States means that the problem is pervasive throughout the country, but particularly in areas where lead-based paint has been applied since 1875. Many homes may contain lead-based paint in concentrations as high as 50 percent lead by weight. In addition, soil concentrations and household dust concentrations are significant enough to poison children indirectly, even those who do not ingest paint chips directly.

Thus, paint itself contributes either directly or indirectly to a substantial amount of the poisoning we find.

In addition, we have examined the problem of lead poisoning in infancy recently in our program. My colleague, Dr. Michael Shannon, who shares responsibility for the lead clinic with me, recently examined the histories of 50 cases of infants who were referred to our clinic over the last 3 years. Of these infants, of these 50 cases, 20 percent were poisoned by water used to prepare their formula. Three of them, the water contamination came from the vessel itself. One, an antique copper kettle; another an imported kettle; and the third, a commercial kettle in which there was lead contamination in the solder or joint between the dome of the kettle and the base.

In the other seven, however, the contamination occurred at the tap water source. By boiling the water in preparation of formula, the parents unwittingly did what the Romans did many, many centuries ago. They concentrated the lead. What the Romans did was make something called Sappa, in which they took wine and boiled it in lead-containing vessels until the wine was distilled down to a very, very concentrated, extraordinarily highly leaded sap, which they then added to their own drinking wine in order to make it taste sweet. I do not think these parents had that in mind. They were simply boiling the water because there were instructions on the can to do so. If they boiled it for 10 or 20 minutes, they concentrated the lead contamination in the formula and these children were poisoned significantly enough to require hospitalization.

I am honored today to be joined in my testimony by Krystle Fandel and her mother, June. Krystle is now almost 7 years old. She was found to have a very high level of lead in her body on routine screening shortly after her third birthday. By the time her lead elevation was discovered, she had already suffered some significant damage.

Despite aggressive therapy, including several weeks of hospitalization and a prolonged period of outpatient management, including painful injections of medicine, not to mention blood tests, Krystle was already found to be significantly delayed by the age of 4 years, and is presently considered to be a year or two behind in her central nervous system development. She is accompanied by her mother, who will make a brief statement, and will be glad to answer questions about Krystle's experience.

I know that the American Academy of Pediatrics feels very strongly about this problem. As Mr. Waxman indicated, the Academy has stated that this problem is the most significant toxin facing America's children. Some 12 million American children are estimated to have lead levels above that which the CDC presently considers defining the toxic effect of lead. If these children are not identified, and if the hazards are not removed, we will significantly blunt the intellectual development of our children, and any kind of educational proposals or any kind of other efforts that are made are not going to be able to correct that.

Thank you, Mr. Chairman. I would be glad to answer questions, and I would like to introduce Mrs. Fandel and Krystle.

[The prepared statement of Mr. Graef follows:]

PREPARED STATEMENT OF JOHN W. GRAEF, ON BEHALF OF AMERICAN ACADEMY OF PEDIATRICS

My name is John W. Graef, M.D. I am a pediatrician with more than 20 years experience in the treatment of childhood lead poisoning. I am Chief of the Lead and Toxicology Clinic at the Children's Hospital in Boston, Massachusetts and Associate Clinical Professor of Pediatrics at the Harvard Medical School. I am a consultant to the Centers for Disease Control and to the Massachusetts Childhood Lead Poison Prevention Program. In 1987, I received the first Lead Poison Prevention Award from the Conservation Law Foundation.

I am here today representing the 41,000 physician members of the American Academy of Pediatrics who are dedicated to the health, safety and well-being of infants, children, adolescents and young adults. We express our strong support for an enlarged federal effort to prevent childhood lead poisoning—an entirely preventable disease.

It has been 21 years since I first testified before the Massachusetts legislature on this issue and 20 years since Massachusetts passed the first statewide lead poisoning prevention act in the country and the Congress passed the Comprehensive Lead Poisoning Act. Since that time, progress has been made. In 1969, the acceptable lead level was 60 mcg/dl of whole blood. In 1970, that was lowered to 40, in 1978 to 30, in 1985 to 25 and soon it will be lowered further to 10. In 1978, the average lead level in this country was 15 mcg/dl.

We are told that when the new national survey data is published in 1991 or early 1992, our current average lead level will be under 10, possibly as low as 6 or 7. Much of that reduction is credited to the removal of lead from gasoline, thanks to the Clean Air Act. Thus, Congress, in one courageous step, lowered the lead levels of millions of American children.

But the other side of the coin is the fact that increasingly sensitive measures of the effects of lead indicate that we have not yet found a level at which poisoning does not occur. Nor have we made any meaningful progress in identifying and removing the single most devastating source of lead poisoning in America's children, lead paint.

Applied to American homes in layer after layer for one hundred years since 1875, the most conservative estimates are that more than 40 million homes in America contain leaded paint. In Massachusetts, where we have one of the most aggressive deleading programs in the nation, 40,000 homes have been deleaded since 1971 when the state lead law was passed. Based on the number of homes built before 1970 in Massachusetts alone, that means we have only 960,000 homes to go.

Speaking for my program, despite the reduction in overall lead levels, last year we admitted almost 30 children to the hospital for treatment and an additional 200 new patients to our clinic.

This is twice the number of children admitted to the hospital during the previous year, and our clinic visits have increased from 1100 in 1989 to 1400 in fiscal 1990 and for fiscal 1991, we are projecting 1800 clinic visits.

There are at least two reasons our numbers have increased. The first is that in March of 1990, Massachusetts implemented mandatory lead screening for all preschool children in the state beginning at a minimum of age one but for those considered at high risk, at age 6 months. Second, our population is suffering with the downturn in the economy and, when that happens, diseases that may be associated with poverty such as poisoning of children through deteriorated lead paint increase.

However, not all of our cases are due to poverty. We have found a considerable number of cases from two other sources which are not related to socioeconomic status. One is from families who have purchased older homes and, attempting to renovate them, have unwittingly created large amounts of lead dust by sanding old, painted surfaces. This has become so common among young families that the television program "This Old House" shown on PBS recently devoted an entire program to the subject of the importance of extensive precautions and the need for professional workers to remove a substance as hazardous as lead paint. Secondly, my colleague, Dr. Michael Shannon and I have reviewed 50 cases of infants, seen in our program in the past four years and discovered that 20 percent of them were poisoned by the ingestion of lead contaminated water used to make up their formula. Of these, three were caused by lead from the vessel used to boil the water and seven were poisoned by boiling and thereby concentrating lead from contaminated tap water. Another 40 percent of these infants were poisoned simply because they were present in the home during a period when renovation work was occurring. Only 24 percent of the infants actually ingested paint chips directly.

More than 15 of the children referred to our program in the last four years were poisoned while residing in federally subsidized housing which was supposed to have been inspected for lead hazards.

Regardless of the means by which these children were poisoned, they were all subjected to significant and unacceptable risk of permanent, irreversible damage to their developing brains. Were it not for our extensive surveillance program, they all might have gone undetected. In some cases, I'm sorry to say, detection came too late to prevent significant toxic effects of their exposure despite treatment.

What these cases illustrate is that lead remains an ubiquitous toxin in the environment of America's children. We cannot afford to produce yet another generation of children in which a significant portion will have their intellectual capacities blunted by lead exposure in early childhood.

On behalf of both the nation's children and the nation's pediatricians, we urge Congress to provide adequate resources for screening of children at risk for lead intoxication. However, of what use is screening if we do not move forward to address systematically the cause of this problem? We urge Congress to provide a significant effort to identify and safely remove lead hazards in housing, and regulate other sources of childhood lead poisoning including drinking water. These efforts will require substantial funds and a long-term commitment. However, as a pediatrician, I know of no more precious resource than the intellectual potential of our children.

I am honored to be accompanied in my appearance before the committee today by Ms. Krystle Fandel of Roslindale, Massachusetts. Krystle is now almost seven years old. She was found to have a very high level of lead in her body on routine screening shortly after her second birthday. By the time her lead elevation was discovered, she had already suffered significant damage. Despite aggressive therapy including several weeks of hospitalization and a prolonged period of outpatient management including painful injections of medicine, Krystle was already found to be significantly delayed by the age of 4 years and is presently considered to be one to two years behind in her central nervous system development. She is accompanied by her mother, June Fandel who, will make a brief statement and will be glad to answer questions about Krystle's experience.

To my mind, Krystle's story illustrates the suffering of America's lead poisoned children—all innocent victims of a problem we created ourselves. We note that the

Administration has recently proposed a program intended to improve America's education system. But how can any proposal succeed if as many as 15 percent of our children, enter school with their intellectual potential impaired by this insidious toxin?

I trust that issue will receive the highest priority in your deliberations.

Thank you.

STATEMENT OF JUNE FANDEL, ACCOMPANIED BY HER DAUGHTER KRYSTLE

Ms. **June Fandel**. Thank you.

My daughter has lead-paint poisoning. We have gone through a number of different things to get the lead out of her. To this day, we still go for blood tests.

Her worst medication was having shots to her leg, which stung, and she could not walk on them, at the age of 3. For a child to go through that, I do not think they understand why they have to go through that.

She has a hard time comprehending people. She does not know what they want from her. She has a hard time expressing herself. She knows what the word is, but instead of saying the word, she goes into a long detail of describing what the word is. Then you have to try to figure out what she is trying to say to you.

Krystle is a very happy-go-lucky child. She is very active. I would not have known she had lead-paint poisoning. She had none of the symptoms whatsoever. I just took her for her regular checkup, and that is when I found out that she had lead-paint poisoning, and it was devastating to me, because I knew nothing about lead-paint poisoning at the time.

She is still kind of confused about it. She asks me every time we have to go to the hospital, why do we have to go; why do I have to get that blood drawn out of my arm? It bothers her a lot, not just physically, but mentally I know it does bother her. She knows it hurts, and I do not like to see any child besides my own go through what my child has to go through because of lead-paint poisoning.

That is about it.

Mr. **Waxman**. Thank you very much for sharing your experience.

Did you know that Krystle had some lead problem, or was this the result of a screening? Did you see some evidence of something?

Ms. **June Fandel**. None whatsoever. She had no symptoms whatsoever. I took her for her regular checkup at 3 years old, and that is when they drew the blood and called me and told me she had a high level of lead-paint poisoning.

Mr. **Waxman**. Dr. Graef, in Massachusetts, is there a law that requires when children go in for checkups, they are tested for lead?

Mr. **Graef**. Yes, there is.

Mr. **Waxman**. And so as I understand it, this is the only State that requires screening of all children?

Mr. **Graef**. That is correct. At the time that Krystle was screened, it was prior, actually, to the inception of the mandatory screening requirement. At that time there was voluntary compliance and already participation by approximately 1,200 pediatric providers in the State.

Mr. **Waxman**. Do you know what the situation is in other States? Are children being screened for lead poisoning?

Mr. **Graef**. It is my understanding that there are no other States with statewide screening. There is isolated screening in various communities in other States, but there are no other statewide screening programs, with the exception of Rhode Island, which in essence uses the Massachusetts model.

Mr. **Waxman**. In fact, we are going to get testimony from the next panel that as many as 15 percent of all children under 6 may be lead poisoned, and that only 5 percent of all children are screened for lead poisoning.

Do parents come to you or to doctors because they notice a problem? Why should they worry about lead poisoning? Would not a serious problem be detectable to a parent?

Mr. **Graef**. It usually is not detectable, particularly at the levels that we are talking about. These children experience no symptoms at all, and in order to detect some of the effects, we have to do some specialized neuro-developmental screening in order to find the imprint of lead.

When children are symptomatic, that is not a problem so much, and those children in a sense are lucky, because they get identified without screening.

Unless we look for these children in areas where they are at risk, we will not find them.

Mr. **Waxman**. Krystle is lucky, because she has been tested, and you know the situation with her. What is the prognosis for children who are unwittingly lead poisoned like Krystle but who are not fortunate enough to live in Massachusetts where there is universal screening?

Mr. **Graef**. It is really grim. I think that what we have basically done is produce a generation of children whose intellectual development is blunted by lead. The issue often is obfuscated by raising the question of whether or not these children might have, let us say, average IQ's. Within the range of average IQ, there is a relatively broad range of normal; but for an individual child, the difference of perhaps 10 IQ points, while they might still remain in the broad definition of average, would have blunted that child's intellectual potential.

I presume you will hear testimony from other witnesses today about this particular neuro-developmental effect, but I would like to make the point that, for any given child, the fact that that child might not necessarily have been overtly affected so that they have to be institutionalized does not mean that they were not permanently blunted.

Mr. **Waxman**. Ms. Fandel, when you found out that Krystle had high blood levels of lead, what steps did you take?

Ms. **June Fandel**. Her doctor at the time turned around and got in touch with Dr. Graef to make appointments for her to go into the hospital for 2 weeks, which she stayed for 2 weeks, and I was not allowed to go back to the apartment, because it was full of lead.

Mr. **Waxman**. So you moved out of the apartment?

Ms. **June Fandel**. Yes, I did. I moved out of the apartment. I stayed with my sister, and then 7 months after that I got an apartment on my own. I never went back to that apartment that had the lead in it.

Mr. WAXMAN. Did you have any reason to suspect there was lead paint in your apartment before Krystle was diagnosed?

Ms. JUNE FANDEL. No.

Mr. WAXMAN. Was there peeling paint on the walls or paint chips on the floor?

Ms. JUNE FANDEL. Mostly she played by the window sills, and the dust from opening and closing a wooden window, you get the dust from it; and she is a thumbsucker. So from her sitting there watching the kids outside, the only way I figure she got it underneath her thumb, then sucking her thumb, and that is how it got into her system.

Mr. WAXMAN. Sometimes we think about slum homes, paint peeling, paint chips all over the place. Was your home like that?

Ms. JUNE FANDEL. No.

Mr. WAXMAN. Well taken care of?

Ms. JUNE FANDEL. Yes.

Mr. GRAEF. Mr. Chairman, if I may, I would like to add a point here.

There is in the discussion, in public discussion of lead poisoning, often a tendency, and I have heard it suggested publicly, that the problem really is that the child is not adequately supervised.

On behalf of the Academy of Pediatrics, I believe I can say with reasonable certainty that some degree of oral behavior is normal in children, that it is up to us to make sure that the environment that these children have is safe, rather than altering their behavior in such a way as to produce some sort of abnormal developmental outcome for them in order to protect them from an environmental hazard that we control.

Mr. WAXMAN. If someone had told you that the apartment had a lead paint problem, would you have rented that apartment?

Ms. JUNE FANDEL. No, I would not have stayed in that apartment.

Mr. WAXMAN. Dr. Graef, Krystle's problems are caused by exposure to lead paint; but another major source of lead exposure is from drinking water. We usually think of drinking water as contributing to widespread low-level exposure in a very broad population, but you indicate that you have treated cases in which the lead poisoning is caused by infant formula made from water contaminated by lead.

Do you mean to say that in some households a mother may be unknowingly poisoning her infant every time she gives the baby a bottle?

Mr. GRAEF. Indeed.

Mr. WAXMAN. And how does that happen?

Mr. GRAEF. As I indicated, I think in the boiling process, whatever lead contamination occurs is concentrated in the water. The formula manufacturers, for reasons that are not entirely clear, recommend boiling for 5 minutes. I presume because it is because they can be a little bit uncertain about the quality of the water from a bacteriological point of view. In any case, they recommend 5 minutes of boiling. Rarely do parents stick to the 5 minutes. They will often boil the water for 10 or 20 minutes, and that will concentrate the water considerably.

Mr. **Waxman**. The boiling concentrates the amount of lead that is left?

Mr. **Graef**. The lead itself will not be boiled off at 212 degrees Fahrenheit, so that the water will concentrate and the amount of lead will be further contaminated, or the concentration of lead in the water will be higher. Then daily intake of that with formula, and many parents will make up the day's formula with the first morning supply.

Mr. **Waxman**. Is there a lead problem more from drinking water than paint? Do you know what proportions; do you have any estimate of how big a risk there is from drinking water as compared to paint?

Mr. **Graef**. I do not think we have as specific data about water as we do about paint. For one thing, we have had much more experience dealing with the paint situation. I think that the water situation is far more pervasive than we thought it was.

I guess we consider paint to be a high dose source, when children's lead levels climb very, very rapidly. Although there might be specific circumstances where contaminated water might do that, by and large that is more likely to be paint. I think what struck us is that in infants who are not particularly ambulatory, so they are not walking around going to windowsills, we are talking about 8 month olds and 9 month olds, we had to be thinking about something other than paint, because it was apparent that paint was not easily going to get into their environment unless it was falling off the ceiling. That might happen, but it is relatively rare. So that made us consider the water issue, and water is not routinely screened for. We do not have an easy mechanism for doing water analysis. I do not mean to say that it is not chemically easy, but it is not readily available to everybody, it tends to be an afterthought. The possibility of available standardized water screening would be a big boon in reducing this hazard.

Mr. **Waxman**. Thank you very much. I want to call on my colleagues to ask question they may have.

Mr. **Dannemeyer**. Thank you, Mr. Chairman.

Dr. Graef, if you were testifying in a court of law and you were asked a question of approximate cause as to what the causative factor of this little girl having lead in her system was, could you answer?

Mr. **Graef**. In her case?

Mr. **Dannemeyer**. Yes.

Mr. **Graef**. Yes.

Mr. **Dannemeyer**. And you believe it is paint?

Mr. **Graef**. This was paint, yes.

Mr. **Dannemeyer**. I am not questioning that. Just, how do you go about making the determination?

Mr. **Graef**. By the concentration of lead in her blood, which in her case was over 70 micrograms per deciliter. In order to achieve a concentration of that type, one would have to postulate a high dose source. It is remotely possible in her case that water might have contributed, but in fact she had paint chips in her belly, which we could see on the x-ray.

Mr. **Dannemeyer**. Paint chips?

Mr. **Graef**. Yes. They were visible. I have a slide with me that shows that phenomenon. Unfortunately, we were not able to show it today. But we can see this on an x-ray.

Mr. **Dannemeyer**. Based on your work there in Massachusetts, have you calculated what percentage of children are involved with lead as Krystle is?

Mr. **Graef**. It has changed considerably since we have instituted the kind of surveillance that we have. In 1975, 8 percent of the children in the Commonwealth had lead levels greater than 40. Since the surveillance programs and the very extensive effort that we have now in Massachusetts where more than 300,000 children are screened annually, and I know you will hear from the Massachusetts program director, the incidence of the disease has dropped now to a little bit under 1 percent, and that is with lead levels over 25. So we have made a significant dent in the problem.

Mr. **Dannemeyer**. Do you have any idea whether this is a similar number across the country?

Mr. **Graef**. I would doubt that it is a similar number across the country, because across the country I do not think they have as extensive a program as we do. In isolated communities in certain areas where there has been some extensive work, I am not familiar, for example, with the data out of Louisville, but I would not be surprised to see if Louisville has made a dent on its problem as well. Individual communities may see this, but I do not think that individual States have done so.

Mr. **Dannemeyer**. You have indicated that there has been an increase in children admitted to your clinic in the last year.

Mr. **Graef**. Yes.

Mr. **Dannemeyer**. Do you have any estimate as to what the reason for that is?

Mr. **Graef**. Yes, I do. I think there are two reasons. The first reason is that with the mandatory screening in effect in Massachusetts, and I am not here speaking for the Academy of Pediatrics, because I believe the Academy has yet to comment on mandatory screening and would probably prefer to see screening programs remain voluntary at this time; however, with the institution of mandatory screening in Massachusetts, where the lead paint problem is so pervasive that we felt that it was warranted, and was by the way, supported by the Massachusetts chapter of the Academy of Pediatrics, with that in effect we essentially widened our net considerably. So we began to pick up an additional group of children from the middle class, from other classes where the assumption of lead poisoning was not being made, so that children who were not previously been screened now were being screened.

The second reason frankly is the nature of the economy at the present time. Lead poisoning has sometimes been felt to be one of the market diseases of poverty, and although it knows really no specific class and no race or any other specific characteristic, it certainly is more pervasive in the poor, and in this situation where the economy has been hurt, I think we are seeing just an increase in cases on that basis alone.

Mr. **Dannemeyer**. What is the prognosis for this young lady? Will she come out of it, with treatment, in the future?

Mr. **Graef**. Well, she is a lovely kid, and I think she is going to be a fine human being. I wish I could be as optimistic about her intellectual prognosis as I can be about her humanity. I think that she has gotten off behind the eight ball. She is already a year behind, a year-and-a-half behind. We do hope that remedial education can help some of these children, but there is evidence from my colleague, Dr. Bellinger at the Children's Hospital, that whatever reversibility there is appears to be only related to very early exposure and is associated, frankly, with economic class, so that unless you can mobilize very substantial resources on behalf of these children, the chances of reversing any kind of effect of this are virtually nil.

Mr. **Dannemeyer**. We know that the minerals nature has a need for minerals of many types in the human system to have balance. Is lead in the group that we need routinely for balance in our system? A certain quantity?

Mr. **Graef**. We know of no biological value of lead whatsoever.

Mr. **Dannemeyer**. So it's something that we don't need in our farce with science today we don't need it all then, huh?

Mr. **Graef**. As far as we know we don't need it at all.

Mr. **Dannemeyer**. Education, wouldn't you say, is an important element to this whole issue, I mean I agree with your observations, parents have responsibility to watch for their kids rather than restricting the environment of children. Having raised——

Mr. **Graef**. I don't think that was my observation, Mr. Dannemeyer. If I may.

Mr. **Dannemeyer**. I thought I heard you say that we have a responsibility as parents to watch what our kids are doing rather than try to change their environment.

Mr. **Graef**. No, it was the opposite, I'm afraid. I felt that the idea of modifying the children's behavior as a means of protecting them against this, particularly the hand to mouth activity which we feel is normal behavior for children that that is not the approach that should be taken. We felt that the environment should be addressed rather than the child's behavior.

Mr. **Dannemeyer**. Oh, well, but education on the part of the public of the awareness of what you are describing is an important element in this struggle, isn't it?

Mr. **Graef**. It is.

Mr. **Dannemeyer**. Thank you, Mr. Chairman.

Mr. **Waxman**. Thank you, Mr. Dannemeyer. Mr. Sikorski.

Mr. **Sikorski**. Thank you, Mr. Chairman. Krystle, thank you for coming and—I'm over here.

Thank you for coming and you're a beautiful and charming young lady and you and your mother have by coming here and helping us accomplish much and for standing up for a lot of kids younger than you are and older than you are. So, thank you for your accomplishments.

Dr. Graef, while I have you, all the Agencies affected, including the Office of Management and Budget, and the Consul of the Economic Advisory to the President signed off on a proposal by EPA to require incinerators, usually municipal incinerators and especially the bigger ones who think they can burn everything and take care of their problem. The smaller ones tend to separate.

Requiring these incinerators to separate out lead batteries, about 60 percent of the lead that gets into the incinerator goes up into the air. I know your specialty is not the air, but the Vice President of the United States took it upon himself to veto that under the guise of action by the Council for Competitiveness.

And that's my question to you. How, when we know that nothing clears—nothing naturally clears this out; when it's burned it gets into the air and it is not destroyed, it gets into the air and comes down to pollute. Once it gets into a little kid's body or someone else's body, it gets into the bone marrow, it gets into the organs, if it's not taken out by treatment it discharges and gets into other parts. It can free itself and run around and do more damage.

The point on competitiveness is that we're talking about a lot of poor people, a lot of less educated people who don't have the protection that they should have from lead. But we're not talking about them. We're talking about all income levels, all education levels and the impacts are equal opportunity as well. We not only don't have average kids who are average, but below average, but we don't have above average kids, above average, they're a little bit lower and near geniuses are a little bit lower, and geniuses are a little bit lower, and super geniuses are a little bit lower and competing with kids from Japan and Germany and around the world who don't have the lead threat. We're at a disadvantage, are we not from a competitiveness standpoint?

Mr. **Graef**. Well, I wish I could be sure that those children also don't have a lead threat. Unfortunately, from that point view I'm not sure that's the place where we should be looking at competitiveness.

I think it's important to recognize———

Mr. **Sikorski**. I'm not suggesting that. I'm just saying that from the Council for Competitiveness perspective and I don't want to measure this environmental or health threat from that perspective, but here they are telling the professionals, including the budgeteers that we can't do this for some guise—under some guise of competitiveness. I find that very strange. But just looking at this issue from a competitive standpoint, we're loosing the super geniuses as well as the average kids.

Mr. **Graef**. I think I can speak for the Academy of Pediatrics and suggesting that while we recognize that lead and its use has a place in the economy of our industry and lead can be—indeed, it's such a useful metal it's been used for so many purposes it's one of the reasons we have a problem.

But that is not a reason to permit children to be exposed to it in ways that are going to alter their intellectual development and we would certainly agree that any appropriate economic use of lead should take into consideration the hazards to environment and to children in particular.

Mr. **Sikorski**. Thank you. I want to thank you Dr. Graef, thank Krystle, thank Ms. Fandel and all the other panelists and apologize for having to leave early, but will followup working with you. Thanks.

Mr. **Waxman**. Thanks, Mr. Sikorski. Mr. Scheuer.

Mr. **Scheuer**. Thank you, Mr. Chairman and thank you Ms. Fandel for your fine, very touching testimony. And thank you

Krystle for behaving so beautifully. Okay? Sitting there and smiling.

Ms. Krystle Fandel. You're welcome.

Mr. Scheuer. I wish my grandchildren could be here to watch you Krystle, they would want to make friends with you right away.

Dr. Graef, can I ask you a couple of questions? If I wanted to put out a sort of a health warning in my newsletter, and tell my *500,000 people, hey, those of you who have kids, there's a real* hazard out here. For those of you have bought a new home or rented a new apartment, here's what you ought to do. What would I tell them?

Mr. Graef. I think you would suggest to them that lead is an ubiquitous hazard, it's really found——

Mr. Scheuer. What do they do? Let's I assume I tell them it's an ubiquitous hazard, not only that, but it's everywhere, okay?

Remember, this is a newsletter to 500,000 people, they don't all have PhD's. What do I tell them? What do I suggest that they do? Now, this is part of the public education program. You can design a national education program for 535 Congressmen and Senators.

Mr. Graef. I think they should familiarize themselves with ways in which lead could enter their environment and by all means discuss with their pediatrician——

Mr. Scheuer. Dr. Graef, they've just bought a new home. My daughter just bought a new home in Riverdale, she's got three wonderful grandchildren——

Mr. Graef. Are you saying it's a new home, Mr. Scheuer, or are you saying——

Mr. Scheuer. No. It's about 40 years old.

Mr. Graef. I see, thank you.

Mr. Scheuer. Great big beautiful new home, 40 years old, what do I tell her to do?

Mr. Graef. First have it inspected for lead hazards.

Mr. Scheuer. Now, we're getting there. Where would she find an inspector? Would she call the local hospital?

Mr. Graef. She may have to call Massachusetts.

Mr. Scheuer. Now you've got my New York dander up.

Mr. Graef. I don't mean to have your New York dander up, Mr. Scheuer, but indeed because of the extent of the program in Massachusetts, as you'll hear, there is a private industry that has really set up a fairly extensive network of available led screening as well as the availability of State facilities. So that's an important part of the element of the program.

Mr. Scheuer. Does that not exist in New York, to your knowledge?

Mr. Graef. Not to my knowledge. I don't know that there aren't private lead inspectors, but I don't believe that there's a certification program in any other State. In Massachusetts all the inspectors and the letters have to be certified.

One of the problems that we ran into was that in the deleading of homes by fly-by-night contractors, in fact, children were getting into worse situations than they were before because lead chips were now being left around the house rampantly or dust was raised and so forth. So that in the process of setting up a safer program for these folks to have a certification program as part of the new Massachusetts lead requirements.

That would be one piece of advice that I would certainly give your daughter and the other is periodically to have her child have lead testing.

Mr. SCHEUER. And that happens routinely in Massachusetts?

Mr. GRAEF. It does.

Mr. SCHEUER. But not in New York or any of the other 49 States?

Mr. GRAEF. It's available in New York. I think when requested, but I don't believe it happens——

Mr. SCHEUER. Okay, where is it available?

Mr. GRAEF. I understand that the—you would have to really ask somebody from New York, but I understand that Albany has a lab and New York City does very extensive lead screening.

Mr. SCHEUER. Okay. That's very helpful. Is this lead poisoning caused most often by long-term exposure or by an intensive short time exposure? In other words, is it an acute problem or a chronic problem?

Mr. GRAEF. For most children it is a slow insidious ingestion of relatively small amounts of lead over time. Usually from dust, possibly from soil and indeed the addition of contaminated water as a consideration.

Mr. SCHEUER. Tell us why this is a kid's disease? Why don't adults who move into a lead infested apartment or house, why don't they come down with this?

Mr. GRAEF. There are three reasons. The first is that biologically children absorb a substantial amount more of lead for any given exposure.

The second reason is that the toxic effects of lead on the central nervous system are not the same in adults. Unfortunately, I'm afraid all of us have our brain development is pretty much as far as it's going to go and we probably finished learning in the fifth grade or something to that extent. But the fact is that the impact of lead on the developing brain is where it's impact is both most toxic and irreversible.

And the third reason is that the natural behaviors of children, the exploratory behavior, the tasting behaviors of children which I would reiterate are normal behaviors and are not the problem. But unfortunately in an unsafe environment they can become a part of the problem so that of those two variables, as I will again state, the environment is the one we can control and should control rather than these rather normal exploratory behaviors of children.

Those three factors are the major ones that contribute to the toxicity of lead in children. The developing issues—the development issues are overwhelming because of the rapidity with which children are growing and it takes a very small amount of lead to blunt those effects.

Now, it does occur in adults, but we can fix that in adults provided they don't become so severely ill that they have major problems. But we can help adults. But children, once the horse is out of the barn, that's it.

Mr. **Waxman**. Thank you, Mr. Scheuer, and all these points that you have raised, we're going to hear from other witnesses who are going to share their expertise with us.

But I want to thank the three of you very much for being here and Ms. Fandel and Krystle for sharing your experiences.

Krystle, we wish you the very best. We look for great things from you. You're a lovely young lady and I thank you for coming all the way from Massachusetts to share your experience and tell us, with your mother about lead.

Thank you for being with us.

Mr. **Graef**. Thank you, Mr. Chairman.

Ms. **June Fandel**. Thank you.

Mr. **Waxman**. Before I call in the next group of witnesses I want to acknowledge that we have a group of students from John Marshall High School in Los Angeles, most of these students, if not all of them, are not only visiting Washington for the first time, but have only been in this country for a relatively short period of time. And we want to welcome you to this congressional hearing.

For our second panel of witnesses, we have Dr. Vernon N. Houk, Director for the Center for Environmental Health and Injury Control, Centers for Disease Control; Linda J. Fisher, Assistant Administrator, Office of Pesticides and Toxic Substances, U.S. Environmental Protection Agency; William Hiscock, chief, program initiative branch, Medicaid bureau, Health Care Finance Administration; Dr. John F. Rosen, Chairman, Centers for Disease Control Advisory Committee on Childhood Lead Poisoning and also professor of pediatrics at Montifiore Medical Center, Albert Einstein College of Medicine; Brad Prenney, State of Massachusetts, director of Childhood Lead Poisoning Prevention Program.

We are pleased to welcome you all to this hearing this morning. Your prepared statements will be in the record in full. We would like to ask, if you would, to limit the oral presentation to no more than 5 minutes and we'll have to be strict about the time limit because we have such a long list of witnesses and we want a full opportunity to hear from everyone and to have questions and answers from the members of the subcommittee.

Dr. Houk, why don't we start with you?

STATEMENTS OF VERNON N. HOUK, DIRECTOR, CENTER FOR ENVIRONMENTAL HEALTH AND INJURY CONTROL, CENTERS FOR DISEASE CONTROL; LINDA J. FISHER, ASSISTANT ADMINISTRATOR, OFFICE OF PESTICIDES AND TOXIC SUBSTANCES, ENVIRONMENTAL PROTECTION AGENCY; WILLIAM HISCOCK, CHIEF, PROGRAM INITIATIVES BRANCH, MEDICAID BUREAU, HEALTH CARE FINANCE ADMINISTRATION; JOHN F. ROSEN, PROFESSOR OF PEDIATRICS, MONTIFIORE MEDICAL CENTER, ALBERT EINSTEIN COLLEGE OF MEDICINE; AND BRAD PRENNEY, DIRECTOR, CHILDHOOD LEAD POISONING PREVENTION PROGRAM, MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

Mr. **Houk**. Thank you, Mr. Chairman. Before I begin my prepared remarks, may I support something that Dr. Graef said because that has been one of my major irritants since 1972 in dealing with this issue.

There are people in this country who blame the child and blame the parent because the child has lead poisoning. The reason a child gets lead poisoning is because it incorporates an environmental contaminant, lead, into its system that we put into the environment, by doing the things that a child is supposed to do as part of its normal development, the hand and mouth activity.

I am pleased to testify before this subcommittee today on behalf of the Department of Health and Human Services on the subject of lead-based paint poisoning.

The Department strongly supports efforts to prevent lead poisoning and also supports reauthorization of the screening program.

Lead poisoning remains the most common societally devastating environmental disease of young children. Its tragic consequences on our children are even more deplorable because they are preventable.

The risks of lead exposure are not based upon theoretical calculations. They are well known from the studies of children themselves. Lead is a poison that affects virtually every system in the body. Children and the fetus are especially vulnerable because lead causes neurobehavioral problems, learning disabilities and deficits in IQ.

Studies over the past 20 years uncover a consistent trend, the more that is learned about lead effects on the child and the fetus, the lower the blood level at which adverse effects could be documented. The current CDC reassessment is likely to place a new threshold of concern at 10 to 15 micrograms per deciliter.

Despite substantial progress in reducing lead exposure in the population over the last 20 years, in 1984 at least 3 to 4 million children, or 17 percent, had blood leads above 15 micrograms per deciliter.

The large number of children with blood leads in the toxic range show that existing environmental lead levels in the United States provide no margin of safety for the population of children.

Childhood lead poisoning is entirely preventable. We believe that a concerted societywide effort could eliminate this disease in the United States within 20 years. The Secretary recently released our strategic plan outlining the first 5 years of this effort.

The plan describes actions to be taken at all levels of government and the private sector. The overall benefits to the society are incontroversial and I submit a copy of the plan for the record. [The material may be found in the subcommittee files.]

The plan includes both a program and a research agenda. The program agenda is expanded childhood lead poisoning prevention programs and activities; the effective and safe abatement of lead-based paint in housing; reduction in sources of lead exposure in addition to lead-based paint; and a national surveillance program.

Increased childhood lead poisoning prevention activities are essential parts of the national strategy. Children should be screened for elevated leads so the affected child will receive appropriate medical attention and environmental followup. Screening and surveillance data are also important for defining the areas in greatest need of intensive interventions and for evaluating the success of the efforts to eliminate the disease.

Effective and safe lead-based paint abatement is essential. It is the most concentrated source of lead for our children and historically, the source most closely linked to poisoning and the high dose lead poisoning in the child; both from the ingestion of the paint chips and the dust.

Any plans to eliminate childhood lead poisoning must focus on other widespread sources and pathways of lead exposure to children. Lead in water, food, soil and air, in particular, may affect large numbers of children and may contribute to the overall levels of lead in the population. Continued efforts to provide these sources and pathways of lead exposure will result in lower average blood lead levels in the United States and thereby further reduce the likelihood of lead poisoning developing in our country.

The development and the release by HHS, EPA, and HUD of their plans in a coordinated matter is a major milestone in public health. And we hope it will initiate a determined effort to eliminate childhood lead poisoning. However, plans in and of themselves will not achieve our goal. It is how we implement plans that will determine our success.

We have a landmark opportunity to make a major impact on the lives of the children of this country. We can eliminate one of the major diseases of children. Through coordinated efforts at the Federal and State level, and the local governmental levels, with the private sector and individual citizens, we can have an impact on the future of millions of our children and indeed the future of our society. Our children—the most important resource for the future—deserve nothing less. We at HHS are committed to providing nothing less.

Thank you, Mr. Chairman.

[Testimony resumes on p. 48.]

[The prepared statement of Mr. Houk follows:]

Testimony by

Vernon N. Houk, M.D.
Assistant Surgeon General
Director
Center for Environmental Health and Injury Control
Centers for Disease Control
Public Health Service
U.S. Department of Health and Human Services

Good morning, Mr. Chairman and members of the Subcommittee. I am Dr. Vernon N. Houk, Director, Center for Environmental Health and Injury Control, Centers for Disease Control (CDC). I am pleased to testify before this Subcommittee on the subject of lead poisoning prevention. The Department strongly supports efforts to prevent lead poisoning and supports reauthorization of CDC's lead screening program.

HEALTH EFFECTS

Lead is the number one environmental poison for children. The risks of lead exposure are not based on theoretical calculations. They are well known from studies of children themselves and are not extrapolated from data on laboratory animals or high-dose occupational exposures. The Department and others have testified previously before this Subcommittee and others emphasizing the adverse health effects of low-level lead exposure. I will only summarize the data and not repeat them in detail.

Lead is a poison that affects virtually every system in the body. It has been linked to kidney disease and hypertension in adults and is particularly harmful to the developing brain and nervous system; therefore, lead exposure is especially devastating to children and fetuses because it can cause neurobehavioral problems, learning disabilities, and deficits in IQ. Very severe lead exposure can cause coma, convulsions, and death; and until twenty years ago, deaths in children from lead poisoning were not uncommon.

These deaths have been almost eliminated as a result of increased awareness of lead poisoning, screening, and interventions to reduce blood lead levels. Significant disease, however, has not. We currently estimate that there are about 250,000 children under 6 years of age whose blood lead is 25 µg/dl and greater. This estimate for 1984, however, is based on 1976-80 data from a CDC survey of the nutritional and health status of the U.S. population. This survey, the National Health and Nutrition Examination Survey (NHANES), will be updated in 1992 and is expected to show that blood lead levels in the United States have decreased dramatically by about two-thirds since the 1976-1980 NHANES. The primary contributors to this decrease have been the phaseout of lead in gasoline and the reduction of lead levels in food.

The adverse effects of blood lead levels of 25 µg/dl and higher are serious. The top priority of our strategic plan for the elimination of childhood lead poisoning, which I will describe in more detail, is to identify as soon as possible those children with these high blood lead levels and to remove them from the source of lead and provide appropriate medical care.

The widely cited Needleman studies documented that children exposed to moderate levels of lead in preschool years as indicated by tooth lead levels were seven times more likely to fail to graduate from high school and six times more likely to have a significant reading disability than children who had lower lead exposures.

While we know that blood lead levels above 25 µg/dl are the most dangerous, studies on the health effects of lead over the past twenty years uncover a consistent trend: the more that is learned about lead's effects on children and fetuses, the lower the blood lead level at which adverse effects can be documented. A current CDC reassessment may place the new threshold for concern at 10-15 µg/dl.

Blood lead levels as low as 10 µg/dl, which usually do not cause distinctive symptoms, are associated with subtle developmental effects, such as decreased intelligence and slower neurobehavioral development. For example, blood lead levels of 10 µg/dl and above at age 2 years have been shown to result in a reduction of the General Cognitive Index -- especially one component of this test (the visual perception component) -- when later tested at the age of 57 months. The majority of these children had blood lead levels below 15 µg/dl. Other effects that begin at blood lead levels as low as 10 µg/dl include behavioral disturbances, reduced stature, and effects on vitamin D metabolism. Studies show that maternal and cord blood lead levels of 10 to 15 µg/dl are associated with reduced gestational age and reduced weight at birth.

Although researchers have not yet completely defined the impact of blood lead levels below 10 µg/dl on central nervous system function, we may learn that even these levels are associated with adverse effects as our research instruments become more precise.

Lead poisoning is the most common and devastating environmental disease of young children in the United States. Over the last twenty years, we as a society have made substantial progress in reducing lead exposure in the population. The decline in blood lead levels has been in part aided by government and private steps to reduce lead exposure, such as the removal of lead from gasoline, from paint manufactured for interior residential use, and from food. In 1984, at least 3 to 4 million children in the United States (17 percent of all children) had blood lead levels above 15 µg/dl, as was documented in the 1988 Report to Congress, The Nature and Extent of Lead Poisoning in Children in the United States, prepared by the Agency for Toxic Substances and Disease Registry of the Public Health Service. The large number of children with blood lead levels in the toxic range shows that existing environmental lead levels in the United States provide no margin of safety for the protection of children.

The adverse effects of lead in children are pervasive and long lasting. Most of them are probably not reversible, although some of the learning disabilities possibly can be overcome with special, very expensive educational efforts, including individualized curricula and intensive tutoring.

STRATEGIC PLAN

Childhood lead poisoning is entirely preventable. We believe that a concerted, society-wide effort could eliminate this disease in the U.S. in the next 20 years. The Secretary has recently released a Strategic Plan for the Elimination of Childhood Lead Poisoning, outlining the global objectives of this 20 year plan. The plan describes actions that can be taken by all levels of government and the private sector. Health and Human Services will play a major role in the leadership and guidance of this effort, but I cannot over emphasize the public-private collaboration that is imperative if we are to succeed in ridding our nation of the scourge of lead poisoning. The costs of the plan will be spread across the public and private sectors, and the overall benefit to society, in terms of human productivity, will be incontrovertible. The Strategic Plan outlines the first 5 years of this 20-year effort. The plan describes actions that can be taken by all levels of government and the private sector. The costs described reflect the amount of money needed to implement the program agenda and a shared commitment of the public and private sectors. This plan was developed in consultation with other Federal agencies, state and local childhood lead poisoning prevention programs and housing agencies, and private sector consultants.

The Strategic Plan includes both a program and a research agenda. The program agenda which will target efforts first to children with the highest blood lead levels, calls for the following:

- Expanded childhood lead poisoning prevention programs and activities.
- Effective and safe abatement of lead-based paint in housing.
- Reduction in sources of lead exposure in addition to lead-based paint.
- National surveillance for elevated blood lead levels.

The research agenda is discussed on page 10 of this statement.

PROGRAM AGENDA

Increased childhood lead poisoning prevention activities are essential parts of a national strategy to eliminate childhood lead poisoning for several reasons, not the least of which is the adverse effect lead poisoning has on school readiness. Our effort to reduce lead poisoning is totally complementary with 'resident's education goals for the nation's children. We must, as I have said before, use our resources to the greatest advantage, which is why we are concentrating on screening, detection, treatment and surveillance. Children should be screened for elevated blood lead levels so that affected children will receive appropriate medical attention and environmental follow-up. As I said before, emphasis will be placed initially on those areas where children whose blood lead is 25 µg/dl and greater. An increase in the blood lead of these children would be devastating. Screening and surveillance data are also important for defining those areas in greatest need of intensive interventions and for evaluating the success of our efforts to eliminate this disease.

Current childhood lead screening efforts tend to occur at fixed-site facilities, like clinics. It is not unusual, however, to find three to four times the rate of lead poisoned children through intensive door-to-door efforts compared to fixed site screening. In addition, door-to-door screening serves as the entree into the health care system for many children. On the basis of 1988 data from CDC's National Center for Health Statistics National Health Interview Survey, it has been estimated that 8 percent of children less than five years of age do not have a regular source of medical care. Some preliminary data from a pilot study in Philadelphia that suggest children using an inner city walk-in emergency room clinic for primary care also had higher rates of lead poisoning than are typically found at fixed sites. Thus, childhood lead poisoning prevention programs will need to develop more intensive and innovative approaches for identifying those children most at risk for lead poisoning.

In addition, special efforts will have to be made to increase screening by private health care providers. This will be accomplished by educating providers about childhood lead poisoning and its prevention, working with professional organizations, and educating the public so that they request lead screening.

Effective and safe lead-based paint abatement is essential for the elimination of childhood lead poisoning. Lead-based paint is the most concentrated source of lead to children and, historically, is the source most closely linked to lead poisoning in children. Many sources of lead, for example, food, water, soil, and dust, contribute to overall exposure of U.S. children to lead. For children with the highest blood lead levels, that is, children with overt lead poisoning, lead-based paint is of particular importance because of both the contribution of lead paint ingestion and the ingestion of soil and dust contaminated by leaded paint. The average 3-year-old child can excrete about 125 micrograms of lead per day. The average 3-year-old child absorbs about 100 micrograms per day from soil and dust uncontaminated by lead paint and from food and water. The abatement of lead paint will markedly reduce high dose lead exposure from the environment of most children.

We cannot undertake this massive strategy at once. To maximize our resources and expertise, we have identified three high priority groups of homes for abatement. The first high priority is the homes of children identified with lead poisoning. This is important not only to protect these children from continued exposure, but also to prevent children who will live in these dwellings in the future from being poisoned.

The second high priority for abatement is the homes with a serious potential for poisoning children.

Opportunistic abatements, the third high priority, involve those homes that can be efficiently abated because they are being worked on anyway or have other special characteristics. An example of opportunistic abatement is the removal of leaded paint from public housing in the Department of Housing and Urban Development's Comprehensive Modernization Program.

The strategic plan focuses heavily on lead-based paint because of its key role in lead poisoning and because of the limited nature of previous efforts to reduce this source of lead. The plan's strength is its direction and guidance; it must not be confused with a detailed implementation plan, for it is not that. Any plans to eliminate childhood lead poisoning, however, must also focus on other widespread sources and pathways of lead exposure to children. Lead in water, food, soil, and air, in particular, may affect large numbers of children and may contribute to overall levels of lead in the population. Continued efforts to reduce these sources and pathways of lead exposure will result in lower average blood lead levels in the United States and will thereby further diminish the likelihood of lead poisoning developing even in children exposed to a high-dose source.

THE RESEARCH AGENDA

Although basic research has provided the scientific underpinnings of this plan, the research agenda focuses on the applied research needed to carry out the program agenda in the most cost-effective way. Three immediate research needs are apparent: (1) new, inexpensive screening methods for children whose blood lead is below 25 µg/dl, (2) paint abatement techniques that are the most cost effective and least hazardous to workers and occupants of the houses, and (3) ways to accurately determine the lead content of paint already applied.

BENEFIT ANALYSIS

There are benefits to society of preventing lead exposure in children and fetuses, particularly from increased abatement of lead paint.

In the strategic plan, we examine those benefits which result when children are prevented from getting poisoned, since poisoned children often need medical treatment to lower blood lead levels and special education. Benefits are achieved even at blood lead levels not currently considered to indicate that a child is poisoned. We have calculated the expected decrease in lifetime productivity that could be expected for each µg/dl increase in blood lead level in a child. In addition, we have calculated the expected fetal mortality that could be prevented by reducing maternal lead exposure. Our estimate of benefits was conservative; we did not factor in benefits that we were not able to quantify -- for example, those related to hearing acuity and stature in children and blood pressure in adults -- which would make an even stronger case for increasing the amount of abatement being conducted.

I would now like to update you on current and future HHS activities in lead poisoning prevention and the Administration's FY 1992 request for reauthorization of the CDC Childhood Lead Poisoning Prevention Grant Program.

CHILDHOOD LEAD POISONING PREVENTION PROGRAMS

Several programs in HHS fund childhood lead screening activities. These programs include the Maternal and Child Health (MCH) Block Grants; Medicaid's Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) Program; Head Start; and the Centers for Disease Control (CDC) Lead Poisoning Prevention Grant Program. These programs work together at the Federal, state, and local levels. We also work with the Department of Agriculture's Supplemental Food Program for Women, Infants, and Children (WIC). We have documented that to be successful, extensive outreach efforts are needed for programs which screen children for lead poisoning.

Maternal and Child Health Block Grants (MCH)

The MCH Block Grants serve as the principal means of Federal support to states to maintain and improve the health of mothers and children. Although not all states use MCH funds for childhood lead screening, these funds can be a major source of support for this activity.

Head Start

Head Start provides a comprehensive developmental program for low-income children between the ages of 3 and 5 years. Although Head Start is mainly known as an early childhood development program, 99 percent of the enrolled children receive government-supported medical screening, which can include screening for childhood lead poisoning.

CDC Childhood Lead Poisoning Prevention Grant Program

I would like to highlight the newest of our programs that fund screening, the CDC Childhood Lead Poisoning Prevention Grant Program. The Lead Contamination Control Act of 1988 authorized this program of Federal categorical grants, administered by CDC, to state and local agencies for childhood lead screening, referral of children with elevated levels for treatment and environmental intervention, and education about childhood lead poisoning. In FY 1990, $2.84 million were awarded to six states and one city. In addition to continuation funding for these seven programs, approximately seven additional programs will be funded in FY 1991. As you know, the President's 1992 budget recommends that the funding of this CDC program be increased 86 percent from $7.79 million for FY 1991 to $14.95 million. With regard to reauthorization of this grant program, draft legislation proposing a simple 3-year reauthorization is being reviewed within the Administration.

The requested increase will allow a significant expansion of CDC's childhood lead poisoning prevention program activities. First, the number of state and local health agencies funded with categorical grants for childhood lead poisoning prevention programs will be increased to up to 23. The categorical grants to state and local agencies are for screening children for lead poisoning, ensuring appropriate and timely medical and environmental follow-up of lead-poisoned children, and educating the public about lead poisoning. Second, CDC will be able to provide an expansion of laboratory, data management, and other support to both CDC-funded programs and programs not funded by CDC. Third, CDC will be better able to evaluate the effectiveness of interventions to decrease blood lead levels and to expand collaborative efforts with other Federal agencies. Activities in communities likely to have the most severe childhood lead poisoning problems will be emphasized.

CDC has the lead for HHS in childhood lead poisoning prevention. Although not all states receive CDC funding, staff from CDC have improve data collection and management of childhood lead poisoning cases. Much of the development of the strategic plan took place at CDC. CDC also has the lead for HHS in coordinating efforts with other Federal agencies, most notably the Environmental Protection Agency and the Department of Housing and Urban Development.

CDC LEAD STATEMENT

Because of recent scientific evidence for adverse effects of low-level lead exposure, CDC convened a committee of outside experts to help revise the CDC statement, Preventing Lead Poisoning in Young Children, 1985. This document is used extensively and provides guidance to physicians and public health programs concerning screening, management, and primary prevention of childhood lead poisoning. We expect the revised statement to be published this summer. In the new statement, CDC is likely to lower the blood lead level of concern from the present 25 µg/dl to 10-15 µg/dl and will place an increased emphasis on the need for primary prevention of childhood lead poisoning.

LABORATORY MEASUREMENT OF LEAD EXPOSURE IN CHILDREN

CDC, the Bureau of Maternal and Child Health of the Health Resources and Services Administration, and the University of Wisconsin collaboratively administer a proficiency testing program for blood lead and erythrocyte protoporphyrin (EP) measurement. Through this program, on a monthly basis, several hundred participating laboratories evaluate how well they measure lead and EP levels. In a typical month over 90 percent of the participating laboratories meet proficiency standards for blood lead.

As we become concerned about the adverse effects of lower blood lead levels, there is an increased need for more accurate blood lead measurement at lower levels. The lower blood lead levels of concern are very close to the limits of detection of most laboratories. When the proficiency testing program began in 1972, only a few laboratories in the country could accurately measure blood lead. Now, several hundred can do so at levels down to 12 µg/dl. Through our assistance to states we hope to expand this proficiency to levels of around 5 µg/dl within the next year.

Both the Agency for Toxic Substance and Disease Registry (ATSDR) and the National Institute of Environmental Health Sciences (NIEHS) are sponsoring studies to develop and evaluate potential biomarkers of low level lead exposure. In addition, NIEHS is funding work on measurement of bone lead levels using the X-ray fluorescence techniques. This approach promises to be extremely important in assessing body burdens of lead.

NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY

The National Health and Nutrition Examination Survey (NHANES), conducted by NCHS is an evaluation of the nutritional and health status of a representative sample of the United States population. This survey provides the only national data on blood lead levels in U.S. children. Data from the NHANES III, which is ongoing, will be available starting in 1992 and are expected to show that blood lead levels in the United States have decreased dramatically by about two-thirds since NHANES II was conducted in 1976-1980. The primary contributors to this decrease have been the phaseout of lead in gasoline and the reduction of lead levels in food. We may have already experienced most of the benefits to expected from these interventions. However we now believe at efforts focusing on lead in the home environment will be needed to further reduce blood lead levels substantially in the United States population, particularly for those children with the highest levels.

NATIONAL SURVEILLANCE

The data collected in NHANES are essential for providing unbiased estimates of blood lead levels nationally. However, they cannot be used to monitor short-term trends over several months, to characterize geographic distributions of poisoning in the community, or to target interventions where they are most needed. Therefore, CDC is continuing to work with representatives of state health departments, the Council of State and Territorial

Epidemiologists (CSTE), and the Association of State and Territorial Public Health Laboratory Directors to promote national surveillance for elevated blood lead levels.

With CDC participation, CSTE has passed a resolution strongly encouraging its member agencies to institute surveillance of elevated blood lead levels in all age groups. CDC is also assisting CSTE in surveying state health departments to ascertain current surveillance activities for elevated blood lead levels in children. CDC's National Institute for Occupational Safety and Health (NIOSH) has already begun to develop a system for state reporting elevated blood lead levels in workers. In 1988 seven states reported to NIOSH a total of 4,804 workers who had blood lead levels of 25 µg/dl and greater. The number of states reporting to NIOSH has since doubled. In addition, in FY 1990 CDC awarded cooperative agreements to five state health departments to develop the capacity to conduct surveillance for elevated blood lead levels in workers and children.

WORKER SAFETY

Adults are not immune from the effects of lead. NIOSH continues to work with the Department of Housing and Urban Development (HUD) to define the risks to abatement workers, recommend safe work practices, assist in the development of guidelines for workers involved in testing and abatement, and develop a curriculum for training abatement workers. NIOSH has also been working to develop and disseminate information about effective control technology and other measures to reduce lead exposure from bridge reconstruction, radiator repair, battery recycling, and other industries which have historically resulted in occupational lead poisoning cases.

EPIDEMIOLOGIC STUDIES

HHS has a long history of epidemiologic studies relating blood lead levels to sources of lead exposure, such as soil and dust contaminated by lead smelting. Current CDC efforts are focusing on collaboration with screening programs to evaluate routinely collected data and assess screening efficiency, sources of lead exposure, and effectiveness of interventions. The Agency for Toxic Substances and Disease Registry (ATSDR) is working with state health departments in Kansas, Missouri, and Illinois on studies of the amount of lead absorbed by children residing in areas with high concentrations of lead in soil.

The National Institute of Environmental Health Sciences (NIEHS) of the National Institutes of Health has pioneered research on lead's health effects. NIEHS-funded studies include evaluations of the effects of lead on the kidney and the effects of lead on mental development in children exposed to lead in the womb and in the early years after birth.

NIEHS is currently funding clinical studies to evaluate the effectiveness of pharmacologic agents in reducing the effects of lead on cognitive functioning in children and an evaluation of the effectiveness of environmental abatement on childhood lead poisoning.

BIOKINETICS OF LEAD EXPOSURE AND EFFECTS

NIEHS is also funding work to investigate lead transfer from the mother to the fetus and the metabolism of lead in bone. Several NIEHS-funded studies deal with toxicity of lead, for example, the effects on male reproduction, neurodevelopment and behavior, blood production, and immune function. In addition, NIEHS toxicologists are comparing the bioavailability of several different lead compounds and other factors that may affect absorption of lead. The outcomes of these studies are expected to provide a basis for future activities developing and targeting interventions to reduce blood lead levels.

LEAD IN FOOD

The Food and Drug Administration (FDA) has undertaken several efforts to reduce the dietary intake of lead. Infant food manufacturers, working with FDA, have voluntary switched from the use of lead solder cans to glass in packaging their products. Furthermore, domestic canners of adult foods have indicated that the use of lead solder in cans will be almost eliminated by mid-1991. FDA has proposed a new regulatory limit for lead release from ceramic pitchers which could be used to store beverages. The FDA's Total Diet Study has shown a decline in lead exposure from food in recent years, primarily from decreased use of lead solder in cans. FDA is also assessing the importance of other sources of dietary lead exposure, such as various types of housewares, lead foil seals on wine bottles, and calcium supplements.

PHARMACOLOGIC TREATMENT OF LEAD POISONING

Recently, FDA approved a promising new oral chelating agent, CHEMET (succimer), for treatment of children with moderately severe lead poisoning. This agent is very specific for lead, unlike other chelators, and appears to have a low incidence of side effects. NIEHS is funding studies of the neurotoxicity of chelating agents. However, clinical experience with CHEMET has been limited. Consequently, the full spectrum and incidence of adverse reactions, including the possibility of hypersensitivity or idiosyncratic reactions have not been determined.

LEAD AT SUPERFUND SITES

In 1990 ATSDR determined that 43 percent of the 1200 Superfund sites on the National Priorities List (NPL) contain lead. Following a review of its public health assessment database for NPL sites, ATSDR identified 62 sites in which the potential for exposure to lead might pose a hazard to children living nearby. ATSDR will work with state and local health departments to determine whether community exposure assessments and medical education or other more active interventions are needed around these sites.

EDUCATION ABOUT CHILDHOOD LEAD POISONING

Education about childhood lead poisoning is an integral part of most childhood lead poisoning prevention programs. Funds from the MCH Block Grants and the CDC Lead Poisoning Prevention Grant Program are used at the state and local levels to develop educational materials and to educate the public and health care providers about what can be done to prevent childhood lead poisoning.

The National Center for Education in Maternal and Child Health, funded primarily through the Bureau of Maternal and Child Health, provides information services, educational materials, and technical assistance to organizations, agencies, and individuals about maternal and child health issues. Among the materials available from this Center are a resource directory of childhood lead poisoning prevention programs and books and pamphlets about childhood lead poisoning.

The Bureau of Maternal and Child Health also supports the model training program in Louisville, Kentucky. This program teaches methods of assessing lead exposure in high-risk populations. Participants in this training program learn about the importance of integrating lead screening with basic child health services and are taught the technical and management skills needed for effective childhood lead poisoning prevention programs.

In 1990 ATSDR released the Environmental Case Study on Lead, one of ATSDR's Case Studies in Environmental Medicine. This publication describes the health effects of lead and appropriate evaluation and clinical management of childhood lead poisoning. It has been distributed to over 30,000 pediatricians.

CONSULTATION WITH OTHER AGENCIES AND ORGANIZATIONS

HHS agencies are working closely with the Environmental Protection Agency (EPA), HUD, the National Institute of Science and Technology, and other Federal, state, and local agencies, as well as the American Public Health Association, the American Academy of Pediatrics, the media, parent groups, and others in the private sector on issues relevant to childhood lead poisoning prevention and environmental lead abatement. HHS agencies have participated in a Task Force on Lead-Based Paint for over 2 years, and we are looking forward to participating on the new policy-level task force being established by Secretary Kemp.

We have the tools to eliminate childhood lead poisoning in the next 20 years. We do not need new technology to complete this task. However, new technology, which is now being developed, will enable us to complete the task more efficiently, more cost-effectively, and, hopefully, sooner.

We have a landmark opportunity to make a major impact on the lives of the children of this country. We can eliminate one of the major diseases of children. The Federal Government or any single Federal agency cannot solve this problem alone. No state government or single agency within a state can solve this problem alone. The private sector cannot solve this problem alone. Individual citizens cannot solve this problem alone. However, through continued coordination at the Federal level, and work with state and local governments, the private sector, and individual citizens we can have an impact on the future of millions of children, and, indeed, the future of our society. Our children, the most important resource for the future, deserve nothing less. We at HHS are committed to doing our part.

This concludes my testimony. I am happy to answer any questions.

Mr. **Waxman**. Thank you, Dr. Houk.

We will now hear from Ms. Fisher.

STATEMENT OF LINDA J. FISHER

Ms. **Fisher**. Thank you, Mr. Chairman.

I too appreciate the opportunity to appear before you today to discuss issues related to indoor lead exposure. EPA has worked very closely with CDC and shares completely their assessment of the health risks posed to children and other members of society.

The Federal Government has been concerned for many years about the health risks from lead and we have taken a number of successful actions to reduce exposures. We have almost completely removed lead from gasoline. We have eliminated its use in house paint, we have banned the use of lead to solder pipes in public drinking water systems, and we have issued a comprehensive standard to protect workers in general industry from hazardous lead exposures. We have also encouraged the phaseout of solder in food cans.

These efforts have lead to dramatic reductions in blood lead levels. However, although we have made a lot of progress in reducing lead exposures, it clearly is not enough and we must continue our efforts to do more. Science has demonstrated that harmful effects may occur at blood lead levels previously considered safe. Our threshold level of concern for lead toxicity has declined steadily over the past decade and experts agree that a large number of children are still at risk.

We believe most of the risk to children results from three principal sources of exposure; deteriorated lead-based paint, urban soil and dust, and drinking water supplies. Our most severe and immediate problem is with paint and dust exposure in the home. Urban soil is thought to contribute as much as 30 percent to children's exposure. Concentrations of lead in drinking water vary widely, but virtually everyone is exposed to some lead in drinking water even though the average exposures are low.

Other sources such as stationary point sources, sewage sludge disposal sites and Superfund sites tend to affect relatively small populations or involve uncertain exposures.

Lead is a true cross-media contaminant. The lead problem is both indoor and outdoor. It is present in soil, in air, in water and in dust. Most exposures stem from past uses of lead, but not all.

Thus, EPA has developed a lead strategy which takes a comprehensive cross-media approach to the problem and is designed to bring to bear all of the Agency's existing authorities and activities to reduce lead exposure.

The goal of our strategy is to reduce lead exposure to the fullest extent practicable with particular emphasis on the risks to children. To achieve that goal we have set forth two objectives. The first is to significantly reduce the incidence of elevated blood lead levels above 10 micrograms per deciliter in children. And second to significantly reduce, through voluntary and regulatory actions, unacceptable lead exposures that are anticipated to pose risks to children, the general population or the environment.

The challenge we face in trying to reduce lead risks is that the largest exposures result from past uses of lead, uses which are by and large now illegal, but which have already contributed a great deal of lead to the environment. Millions of homes still have lead paint on their walls deteriorating into chips and dust both indoors and outdoors even though lead is no longer used in paint. Much urban soil contains lead deposited from paint and from motor vehicle emissions, even though lead is virtually gone from gasoline. Drinking water often contains lead made from solder and pipes, despite the fact that these uses of lead are now illegal.

Under the EPA strategy we are involved in a number of activities to reduce these exposures. Let me first focus on the ones that will address lead paint. My written statement does list a number of activities in regard to paint. Essentially we are working very closely with HUD to provide the technical support for the development of a national lead-based paint abatement program. Some of our activities are designed to build the necessary infrastructure for a lead-based paint program. These include the development of model training courses for lead inspectors and workers so that abatement activities are undertaken properly and reduce, not increase exposure.

EPA also believes that we should accept the responsibility to develop an accreditation program so citizens will know when they hire people to do abatement that they are properly trained.

We are also engaged in a number of research activities. We are trying to improve the tools to identify geographic hot spots so we can target the children that are most vulnerable. We are developing a lab certification program to be sure that testing accurately assesses the levels of lead in paint.

We are evaluating test methods for their effectiveness in determining the existence of lead levels. We are also investigating the relative efficacy of various abatement techniques.

Our primary activity to address exposures from urban soils is a $15 million study to evaluate children's blood levels when lead contaminated soil and dust are removed.

As part of our strategy we are also going to focus on other sources of exposures. In the area of drinking water, we are considering how to reduce risks through regulations and other means.

Mr. **Waxman**. Ms. Fisher, the rest of that statement is going to be in the record and we thank you very much.

Ms. **Fisher**. Okay.

[Testimony resumes on p. 73.]

[The prepared statement of Ms. Fisher follows:]

TESTIMONY OF
LINDA J. FISHER
ASSISTANT ADMINISTRATOR
OFFICE OF PESTICIDES AND TOXIC SUBSTANCES
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON HEALTH AND THE ENVIRONMENT
OF THE
COMMITTEE ON ENERGY AND COMMERCE
UNITED STATES HOUSE OF REPRESENTATIVES

APRIL 25, 1991

Mr. Chairman and members of the Subcommittee, I want to thank you for the opportunity to appear before you today to talk about the impacts of lead exposure in the indoor environment. I will describe the health effects associated with exposure to lead, and the extent, sources, and economic impacts of this exposure. Then I will turn to the Agency's comprehensive control strategy and activities to reduce these risks. Specifically, I will emphasize our programs to address lead in paint, drinking water, and urban soil and dust -- three areas that have significant impacts in the indoor environment.

HEALTH EFFECTS

As you have heard, and will no doubt hear again from the Centers for Disease Control (CDC) and other health experts here today, lead poses a substantial public health threat -- and our children are the most vulnerable. Fetuses and young children are particularly susceptible to lead. Since human bodies store lead which can be mobilized in the system, fetuses can be adversely affected by lead stored in their mothers' bodies. Considerable data suggest a correlation between elevated blood lead and delays in early neurological and physical development, cognitive and behavioral alterations, alterations in red blood cell metabolism and vitamin D synthesis, and kidney impairment. Lead exposures occurring in and around the home do severe and permanent damage to the intellect of large numbers of our children. Experts have testified that lead exposures to infants and young children are particularly widespread and serious, and demand attention from federal, state and local governments, health care and environmental professionals, and concerned parents and citizens.

Adults also face health risks. Lead is a known poison and has been linked to kidney disease and hypertension in adults. Lead has also been associated with increased risk of cardiovascular disease. Lead exposures also may play a role in miscarriages and in damage to the male reproductive system.

In 1984, CDC estimated that there were about 250,000 children under six years of age with blood lead levels of 25 ug/dl and above. Using the Agency for Toxic Substance and Disease Registry's (ATSDR) 1988 report, Nature and Extent of Lead Poisoning in Children in the United States, and the most recent available information on lead occurrence in various exposure media, EPA staff estimate that blood lead levels in U.S. children have declined by a factor of three or four since those estimates were made. CDC expects to revise its earlier survey, and its ongoing National Health and Nutrition Examination Survey III (NHANES) in 1992, and we expect to see that blood lead levels in the United States have decreased dramatically.

Thus our efforts to reduce lead exposure to children have paid off. However, continuing scientific research has demonstrated that harmful effects may occur at blood lead levels previously considered safe. Based on this new information, our threshold level of concern for lead toxicity has declined steadily over the past decade. Experts agree that a large number of children are still at unacceptable levels of risk.

SOURCES OF EXPOSURE

The principal sources of immediate hazard to children today are a legacy of past uses. For decades, lead was a common constituent of paints, gasoline, and solders. Since lead is indestructible in the environment, exposure to previously deposited lead continues to cause a broad array of health and environmental problems. There is general agreement that these sources of highest risk demand priority attention. The principal pathways of these exposures are: (1) deteriorated lead-based paint, present as chips and dust in buildings; (2) remaining sources of low-level but widespread exposures, particularly from drinking water supplies, because of in-place lead in plumbing and distribution systems; and (3) soil and dust contamination, most commonly from previous deposition of motor vehicle exhaust and exterior paint, especially in urban areas. Lead-laden particles blow into buildings and contaminate ducts, cracks, and surfaces. Soil is tracked into buildings. These routes contribute to bringing an outdoor problem indoors.

It is important to note that the bulk of the current problem comes from exposures to high levels of lead previously deposited when lead was used more extensively. Therefore, reducing elevated blood lead levels in children requires that we turn our efforts first toward management and abatement of in-place lead.

The extent and severity of lead exposures from other sources are either limited to relatively small populations or, in other cases, are uncertain. Such sources include stationary point sources such as primary and secondary smelters, sewage sludge disposal sites (especially incinerators), Superfund National Priority List sites, municipal waste combustors, and mining sites. Elevated exposure can also result from certain products -- for example, imported food cans, hobbyist paint and solder uses, and remaining small uses of leaded gasoline. Finally, occupational exposures can result in elevated lead levels in the home. In any case, contributions from these sources add to the total lead body burden and may cause high blood lead levels in relatively small populations; they are therefore of potential concern.

ECONOMIC IMPACTS

Exposure to lead in the human environment has substantial economic costs, and EPA has been in the forefront in estimating those costs. Children with elevated blood lead levels are at increased risk of reading disability and behavioral disorders which require special reading classes, use of school psychologists, and other compensatory education. In addition, children with overt lead toxicity may need medical attention and children with blood lead levels above 25 ug/dl may require hospitalization.

Exposure to even lower levels of lead has been linked to cognitive losses, such as reduced IQ. Reductions in IQ in turn reduce the earnings potential of the child in the future. These costs are borne by large numbers of children.

Low level lead exposure is also linked to small increases in blood pressure in adult males. Because blood pressure is the major risk factor for cardiovascular disease, these changes may increase medical care costs, heart attacks and deaths. While the individual risks are low, the numbers exposed are in the millions, resulting in significant total risks. The benefits of reducing these risks are substantial.

EPA first performed a quantitative cost-benefit analysis for lead as part of its 1985 rulemaking which essentially eliminated lead from gasoline. The estimated benefits of that rule were approximately $6 billion dollars per year greater than its costs. In 1986 an EPA analysis of a proposed drinking water standard showed net benefits of several billion dollars a year as well. The draft regulatory impact analysis for the actual water standard we will promulgate soon also shows significant net benefits. We will be glad to provide the Committee with these analyses.

CONTROL ACTIONS

Over the last two decades the federal government has taken a number of key actions to reduce risks associated with lead exposures. It has banned the use of lead in house paint and in the solder and pipes used in public drinking water systems. It has issued a comprehensive standard which protects workers in general industry from hazardous lead exposure. It has encouraged the phaseout of solder in food cans. It has virtually removed lead from gasoline.

These actions have been very effective in reducing major sources of exposure. As a result, there have been dramatic reductions in average blood lead levels over the past 10 to 20 years from about 15 ug/dl to about 5 ug/dl. Deaths from lead poisoning, which up to 20 years ago were not uncommon, have been almost eliminated. However, as we mentioned earlier, the concern level has declined as we learn more about the health effects of low levels of lead exposure. While much has been accomplished, clearly much remains to be done.

THE AGENCY'S LEAD STRATEGY

In order to reduce lead exposure, the Agency has a number of ongoing efforts that cut across EPA program offices and often involve our regional offices, other federal agencies, and the states. Today, I would like to outline the Agency's comprehensive, cross-media strategy for lead, which was developed last year in consultation with other federal agencies, such as CDC and the Department of Housing and Urban Development (HUD).

We realized that an extraordinary effort to coordinate Agency activity would be necessary in this case, because in addition to its severe toxicity, lead is truly a multi-media contaminant. Accordingly, the Agency plans to address unacceptable lead exposure by coordinating the use of its authorities across programs to further reduce risks from lead. This strategy will ensure that the efforts conducted by EPA in cooperation with other federal agencies, state and local governments, and the private sector will control lead pollution problems in a unified and coherent way.

The Office of Pesticides and Toxic Substances (OPTS) has been designated to coordinate the development and implementation of this Agency-wide strategy. Under their various statutory authorities, the Office of Pesticides and Toxic Substances, the Office of Water, the Office of Solid Waste and Emergency Response, and the Office of Air and Radiation, supported by EPA's Office of Research and Development, are working together to implement a consolidated plan for significantly reducing lead exposures from different media. In addition to traditional regulatory and enforcement programs, EPA offices are coordinating non-regulatory activities, including integrated risk management, public education, and research efforts.

EPA is also working with other agencies to implement a coordinated federal program to control risks from lead -- efforts which are particularly important because many of our activities are highly interdependent. This coordination will ensure that risks are not just shifted from one population group to another. EPA and HUD have established a Memorandum of Understanding to govern EPA technical support to HUD in the detection, measurement, and abatement of lead-based paint hazards in housing. EPA is also working closely with CDC, the Consumer Product Safety Commission (CPSC), the Occupational Safety and Health Administration (OSHA), the National Institute of Standards and Technology (NIST) and others, through an interagency task force, which we co-chair with HUD. There is a general consensus that paint and dust exposure in the home are the most severe and immediate problem we face.

The Agency has focused its strategy on the goal of reducing lead exposure to the fullest extent practicable, with particular emphasis on reducing the risk to children. To achieve this goal, we have set two objectives: Our first objective is to significantly reduce the incidence of elevated blood lead levels above 10 ug/dl in children, while taking into account the associated costs and benefits. (The 10 ug/dl level is subject to revision in light of a forthcoming CDC report.) We estimate that approximately 15 percent of U.S. children have elevated blood levels above 10 ug/dl, and one percent above CDC's current intervention level of 25 ug/dl. EPA supports CDC's efforts to identify, through surveillance programs, individual children with blood lead levels above 25 ug/dl. These children must have the sources of lead exposure in their environment abated on a priority basis. Our second objective is broader: to significantly reduce, through voluntary or regulatory actions, unacceptable lead exposures that are anticipated to pose risks to children, the general population, or the environment. This second objective focuses attention on ways to cut emissions, expand recycling, and reduce risks from uses of lead. This approach also recognizes that background levels will become more important as we better control existing pathways of exposures.

EPA has identified several cross-media activities that will help focus our planning and future risk reduction efforts. These activities will improve the public's understanding of risk and how to minimize that risk, and also help our state, local, and private sector partners improve their capabilities to identify hazards and reduce risk. These action elements are:

Develop methods to identify geographic lead "hot spots". Our asbestos experience tells us that the federal government cannot abate the risks from diffuse sources effectively or efficiently. However, it can play a vital role in developing the necessary tools to identify priority areas requiring attention. An important part of EPA's lead strategy is to develop techniques that will assist other federal agencies, and state and local governments, to locate and map the regions, cities, neighborhoods, and homes with high lead concentrations or elevated blood lead levels. To accomplish this, EPA will work with other agencies, e.g., with CDC, on its planned lead screening initiative for children. EPA's Region 5 has begun a multi-year project to collect and map information on lead exposures from multiple pathways to target high-risk neighborhoods. This project represents a pilot effort to develop new identification methods, including coordination with state and local authorities, and to promote abatement and in-place management activities.

Develop and transfer abatement technology. In order to ensure that safe, effective, and cost-efficient technical tools are available, we have to develop, evaluate, and disseminate cost-effective methods and tools to abate in-place lead exposure sources. This element includes assessment of methods for in-place management, including their costs and long-term efficacy. In this area, EPA's initial efforts have been focused primarily on lead-based paint. We have been coordinating our efforts with HUD, NIST, CDC, and OSHA. I will discuss that cooperation in more detail later in this testimony.

Develop and implement a public information and education program. Informing and educating the public about sources of lead exposure, how to reduce or avoid exposure, and approaches to preventing additional lead from being introduced into the environment are essential to overall risk reduction. EPA is particularly concerned that, whatever activities the government implements with regard to in-place lead, we need to inform people about how to reduce exposure and avoid actions that will increase risk.

Implement a lead pollution prevention program. Given the major sources of lead exposure, the Agency's principal tasks are to abate and control lead that is already in the environment. However, as evidenced by the second goal of our strategy, we think it is also prudent to direct attention to reducing lead production and consumption which are likely to add to future exposures and unacceptable risks. One aspect of this activity is the Administrator's 33/50 Project, which aims for dramatic voluntary emissions reductions over the next few years for 17 chemicals, including lead. Other aspects of EPA's pollution prevention approach include exploring market-based incentives, promoting recycling, identifying and encouraging cleaner technologies, and using regulatory mechanisms to reduce the use of lead in current and future products where risks outweigh the benefits.

Encourage the availability of environmentally-sound recycling. In order to reduce risks to populations and ecosystems from lead, the Agency seeks to encourage environmentally sound recycling. This element is also meant to ensure that the various pollution control activities do not cripple our ability to recycle lead.

Minimize lead pollution through traditional control mechanisms. This element involves EPA's traditional "end-of-pipe" regulatory approaches. It focuses on cross-program planning within EPA to ensure that offices are using compatible assumptions and approaches, and that program-specific activities are coordinated to maximize risk reduction. These activities pertain primarily to drinking water issues.

Coordinate research programs. A focused, integrated research program is critical to developing sound regulations and a balanced approach to risk reduction. EPA programs are working to set priorities for research and coordinate activities within and outside the Agency. It is particularly important to coordinate with other government agencies (federal, state and local) and the private sector on matters relating to testing and abatement.

Integrate enforcement. EPA is initiating a cross-media approach to enforcement activities, including coordinated inspections, analysis of data, and filings for noncompliance cases.

CURRENT ACTIVITIES

Let me now describe our efforts to address the three major sources of lead associated with past practices -- lead-based paint, drinking water, and urban soil and dust. These three sources contribute heavily to indoor exposures to lead. I then will outline other important elements of our control program insofar as they affect indoor pollution.

A. LEAD-BASED PAINT

Lead-based paint is the most significant source of lead exposure to children. It is responsible for a large percentage of elevated blood lead levels in children (i.e., > 10 ug/dl), and most very high levels (above 25 ug/dl) in children are due to this source. EPA is working very closely with HUD to provide technical support for the development of a national lead-based paint program. An interagency task force, co-chaired by HUD and EPA, provides a mechanism for coordination and communication among federal agencies involved in lead paint issues. This task force also includes participants from CDC, OSHA, NIOSH, CPSC, NIST, ATSDR, and the National Institute for Environmental Health Sciences (NIEHS). In addition, the task force is exploring ways to integrate key components of EPA, CDC, and HUD strategic plans in order to develop a more efficient, coordinated approach to reducing exposures.

Last December, with the release of HUD's Comprehensive and Workable Plan for the Abatement of Lead-based Paint in Privately Owned Housing, Secretary Kemp invited EPA and other agencies to form a federal task force to help HUD implement the plan. Creation of this policy level task force underscores the continuing close coordination and communication among federal agencies on these issues.

EPA is aware that the recognition of this potential health hazard is not sufficient to protect the public; the technical means and the infrastructure to support a national lead-based paint control and abatement effort must be available. EPA, in its support role to HUD, has a number of initiatives planned to ensure that efforts to reduce exposure to lead-based paint are technically sound and feasible. Lessons learned through our experience with the asbestos program are particularly important to our research planning and our nationwide exposure reduction effort for lead-based paint.

In FY 1991, Congress provided EPA with $4 million for lead-based paint abatement, control, and compliance activities, of which $1.5 million was earmarked specifically for worker training in techniques to ensure effective removal operations. Working closely with HUD, we have developed an agenda that complements initiatives underway at HUD, including:

1. Investigation of the long-term efficacy of the various abatement techniques (including encapsulation, removal, enclosure, and replacement) as performed by HUD in their Federal Housing Administration (FHA) Demonstration Project. This work will tell us how abatement methods hold up over time in reducing exposures.
2. Investigation of the long-term efficacy of other control and abatement methods, including repair and maintenance as performed in Baltimore, and low-cost abatement techniques as performed in other urban areas. These techniques, in contrast to the full abatement approach used in HUD's demonstration projects, have been applied in such a way that we can evaluate their individual efficacy, and thereby set priorities to give preference to extreme health hazards.
3. Evaluation of various lead measurement methodologies, including spot test kits and portable and non-portable x-ray fluorescence analyzers for measuring the lead content of paint. We are working closely with NIST in these efforts.
4. Development of a laboratory accreditation implementation

plan, including the development of protocols and standard reference materials for different analytical methods. NIST is involved in this effort, especially in the development of standard reference materials.

5. Development of testing protocols to evaluate the effectiveness and durability of certain encapsulants.
6. Continued consideration of the applicability of the Resource Conservation and Recovery Act (RCRA) to wastes generated from abatement. A report to Congress is currently undergoing Agency review and is expected to be released this summer. We will collect additional data to estimate the cost of treating abatement waste as hazardous, and to evaluate how costs will affect the number of abatements that can be undertaken.

We have several concerns about indoor exposures related to abatement activities that include, but go beyond worker protection (OSHA and HUD are developing written guidelines to protect workers who are removing lead-based paint from public housing). EPA's asbestos experience convinced the Agency that in addition to improperly conducted abatement activities, we also have to prevent unnecessary abatements. Dust and debris from unnecessary or improperly conducted abatement results in a net increase in human exposures and risks. To avoid these problems, we are planning carefully with other federal agencies.

Other activities that are necessary to develop the infrastructure for a nationwide lead-based paint program include:

1. Completion of model training courses that establish state-of-the-art abatement practices and procedures for lead inspectors (completed this summer), abatement supervisors (completed by the end of the calendar year), project designers (completed by the summer of 1992), and workers (completed early in FY92).
2. Establishment of training centers to disseminate the training courses. These centers would provide a geographically diverse network to help provide training courses where they are needed. One center should be funded and operational during this calendar year.
3. Development of a risk communication strategy to get accurate information to the public. Many aspects of exposure to lead-based paint are currently unknown, and our research efforts will help answer some of these questions. We realize that getting the correct information to the public is a primary responsibility of the Agency.
4. Development of a community-based primary prevention guide for lead poisoning, that will be developed through an EPA grant to the Alliance to End Childhood Lead Poisoning. This work should be completed by the fall of 1992.

Of the $1.5 million that was ear-marked for worker training, EPA will use a large percentage of the funds to provide worker training grants to labor and contractor groups for the delivery of the new model courses with the goal to train workers in lead abatement techniques for lead-based paint removal. In addition, the Agency is considering the establishment of a flagship lead center to foster information transfer and stimulate quality training by other institutions. We are also considering seed grants to help develop state lead training programs.

B. DRINKING WATER

While virtually everyone is exposed to some lead in drinking water, average exposures from drinking water are not very high. We estimate the average contribution to a child's blood level to be approximately 1.0 to 2.0 ug/dl, but a small fraction of the population may be exposed at much higher levels. As with soil and paint contamination, exposures caused by drinking water are due primarily to past practices, especially the use of lead in solder and pipes in household plumbing and water distribution systems and the continued use of lead solder. In addition, new brass and bronze plumbing fixtures may leach lead into drinking water and result in a significant exposure to lead. EPA is considering how to reduce risks through a regulatory control program as well as additional research and education efforts.

Lead occurs in drinking water primarily due to corrosion of lead-bearing materials in water supply distribution systems and in household plumbing. The highest exposures occur in areas with corrosive waters, and in buildings with lead solder, brass faucets, or drinking water coolers containing lead. Concentrations vary widely.

In 1988, EPA proposed revisions to the National Primary Drinking Water Regulation for lead under the Safe Drinking Water

Act (SDWA). The major provisions of our proposed revisions required water suppliers to monitor *lead levels in high-risk* homes, under conditions expected to produce the highest concentration of lead (i.e., in first-flush, standing water). The proposal also required water suppliers to lower the corrosivity of the water and to conduct public education if lead concentrations were above target levels. EPA plans to promulgate the final rule by this spring. We estimate that actions by water suppliers to comply with the new rule will result in reduced lead exposure for millions of Americans, including half a million children whose blood lead levels will be brought below 10 ug/dl.

EPA's Office of Drinking Water conducted a pilot public education program in Raleigh, North Carolina, that resulted in simple behavioral changes that can help people avoid elevated lead exposures from drinking water. As part of the final rulemaking, EPA is developing brochures and other communication materials from this pilot study for use by water suppliers. In addition, EPA will use university-based centers to train water suppliers, engineers, and regulators on practical ways to minimize the corrosiveness of water and reduce lead levels in drinking water.

EPA's Office of Drinking Water developed an extensive program to help schools correct lead contamination problems in accordance with the Lead Contamination Control Act (LCCA) of 1988. This program includes: distributing guidance and a testing protocol to monitor for and remedy excessive lead levels in drinking water; conducting training on proper testing and remediation procedures; publishing brands and models of water coolers that contain lead; and listing certified analytical laboratories. Our guidance and training have been disseminated to thousands of schools across the United States.

To further assist action by schools, EPA recently completed a video on testing and remediation of lead contamination in school drinking water. We are evaluating the sensitivity of field test kits that can reduce the costs of monitoring lead in water for schools, as well as the general public. EPA's Office of Drinking Water also was instrumental in the consent agreement between CPSC and a leading manufacturer to recall water coolers that failed EPA's recommended action level; the Office of Drinking Water also continues to oversee state implementation of the 1986 ban on lead plumbing products. Finally, a Safe Drinking Water Hotline has been established to provide information to hundreds of callers each month on the LCCA, the lead ban, and other aspects of lead in drinking water.

In addition to efforts by EPA's Office of Drinking Water, EPA's Office of Toxic Substances is considering TSCA rulemaking to reduce the unreasonable risks posed by lead exposure in drinking water. One potential rulemaking would limit the amount of lead that is leached from brass and bronze plumbing fixtures. Studies indicate that these fixtures can be a significant source of lead in drinking water. The second area of potential rulemaking would limit the sale of lead solder, or use other mechanisms, in order to support the Safe Drinking Water Act ban on lead solder used to join pipes.

C. URBAN SOIL AND DUST

Another area of concern is lead-contaminated urban soil. Soil may be contaminated by non-industrial sources of lead, such as paint, motor vehicle emissions, and household wastes, or by industrial sources, such as battery recycling sites, mining and milling sites, and smelters. Lead-laden particles become both an indoor and an outdoor problem. EPA estimates that this source might contribute as much as thirty percent of exposures leading to elevated blood levels in children.

EPA's Office of Emergency and Remedial Response is conducting a $15 million study of soil contaminated by non-industrial sources in Boston, Baltimore, and Cincinnati. With advice from CDC, the Department of Agriculture, and other agencies, EPA is conducting this pilot study to evaluate the effect on children's blood lead levels when lead-contaminated soil and dust are removed. In addition, EPA intends to establish a joint effort with HUD, CDC, and ATSDR to promote and assist a broader effort to identify the locations, extent, and severity of lead-contaminated soil.

D. OTHER ELEMENTS IN THE REGULATORY PROGRAM

Through its various statutory authorities, EPA is pursuing other traditional regulatory mechanisms (aside from those in drinking water). Because lead presents risks through a wide range of media, the Agency has clustered the rules and policies addressing lead risks from these various media. This approach will allow the Agency and the public to review the regulatory programs of each of EPA's program offices as a whole, and it will help ensure that lead pollution is not simply transferred from one medium to another.

I would like to discuss a few of these individual program activities.

The Toxic Substances Control Act (TSCA)

In addition to the rulemakings for the lead-in-drinking water program and for limitations on the sale of lead solder, which I have already discussed, EPA's Office of Toxic Substances is assessing other products and uses of lead in order to determine if the health or environmental risk are "unreasonable" and should be regulated under TSCA. One use under investigation is industrial lead paint used on bridges, water towers and in many other industrial settings. The Agency will investigate a rulemaking to restrict the use of lead paint in industrial settings where feasible substitute products are available. The Agency also is exploring a rule to require advance notice from anyone intending to manufacture or process lead for a new use, thus giving the Agency an opportunity to review the intended new use and, if appropriate, limit or ban it.

Another initiative under TSCA is to investigate how to encourage the availability of environmentally-sound lead recycling. In January 1991, EPA began a regulatory negotiation process to further investigate lead battery recycling. Recycling lead acid storage batteries is important because of the sheer volume of lead involved -- 80 percent of domestic lead is used in batteries. Moreover, even though most lead acid batteries are recycled, batteries still contributed 65 percent of all lead in municipal solid waste in 1988.

National Ambient Air Quality Standards (NAAQS)

Current EPA activity under the NAAQS fall in two general categories: ensuring compliance with existing standards, and revising the standards. Reducing lead in gasoline, placing controls on categories of stationary sources, and imposing controls on individual industrial sources through state implementation plans have been EPA's principal mechanisms for widespread attainment. We have seen major reductions in air lead emissions and children's blood lead levels. However, available data indicate that near some primary and secondary lead smelters, refineries, and remelters, the NAAQS are not being attained.

The number of children exposed in these non-attainment areas is small compared to the number of children at risk from the major lead sources discussed earlier. However, for these children, non-attainment of the NAAQS can add significantly to their blood levels. Consequently, EPA's Air Office has developed a compliance strategy to bring these areas into attainment, which in some cases requires enforcement action, and in.other cases requires revisions to the state implementation plans. EPA estimates that the number of affected children with blood lead levels greater than 10 ug/dl would be reduced about 50 percent if the current NAAQS were attained in all areas of the country.

In addition, EPA is considering revisions to the existing standard. The Clean Air Act requires EPA to review the NAAQS every five years and make appropriate revisions. We expect that our analysis and reviews will be completed by October 1991.

CONCLUSION

EPA has done a great deal over the past two decades to address lead pollution. Much more needs to be done, and we have many efforts underway. In order to move efficiently to higher levels of protection for public health and the environment, EPA has undertaken a comprehensive assessment of the problem and formulated a strategy that will bring together both our traditional pollution control authorities across the Agency and new concepts of pollution prevention.

This strategy also will result in a coordinated effort to reduce harmful exposure to lead in our society. As I have just explained, it focuses a lot of attention on indoor sources of exposure. Many states have already become quite active in the area of lead. For example, Maryland and Massachusetts both currently have comprehensive lead programs in place. As state activity increases, these programs can serve as models. In addition, we are aware that more states are beginning to develop regulatory programs, as well as lead initiatives. EPA is looking forward to working closely with these states as they move into the lead area.

EPA also recognizes the need for close coordination and cooperation with the other federal agencies involved in this important effort to protect public health and the environment.

Thank you again for the opportunity to speak before this subcommittee.

Mr. WAXMAN. Mr. Hiscock.

STATEMENT OF WILLIAM HISCOCK

Mr. HISCOCK. Thank you, Mr. Chairman and members of the subcommittee. I am pleased to be here this morning to discuss lead poisoning prevention from the respective of the Medicaid Program.

The Health Care Financing Administration's principal means for helping prevent or reduce lead poisoning is through the Medicaid program's preventive and comprehensive Early and Periodic Screening, Diagnostic, and Treatment program [EPSDT]. It's a mandatory service, all States are required to inform families about it, and make it available to all Medicaid-eligible individuals under age 21.

States establish their own specific EPSDT program standards and protocol. However, these must provide for service content and intervals which meet reasonable standards of medical and dental practices established after consultation with recognized medical and dental organizations involved in child health care.

OBRA 1989 amendments codified EPSDT program requirements to include: screening services; vision, dental and hearing services; and other necessary medical services whether or not they are covered under the State's Medicaid plan.

The five components of "screening services" are defined in law as: a comprehensive health and developmental history; comprehensive unclothed physical examination; immunizations appropriate to age and health history; health education; and, laboratory tests including lead blood level assessment appropriate to age and risk factors.

In April 1990 we published the State Medical Manual Instruction which repeated the lead blood level assessment requirement. This institution states: "Where age and risk factors indicate it is medically appropriate to perform a blood level assessment, a blood lead level assessment is mandatory."

Three months later, in July 1990, after consulting with the Centers for Disease Control Lead Poisoning Prevention Branch, HCFA added a clarification to that manual. It referenced defining lead poisoning, and we recommended testing as follows: "Screen all Medicaid-eligible children ages 1 to 5 for lead poisoning. Lead poisoning is defined as an elevated venous blood level of 25 micrograms per deciliter." Perform venous blood level measurements on children with elevated erythrocyte protoporphyrin EP levels."

Our instructions further state that: "Children with lead poisoning require diagnosis and treatment which includes periodic evaluation and an environmental evaluation to identify the source of lead." These are reimbursable services under Medicaid.

Now, should CDC's reassessment place the new threshold at a lower level, HCFA would consider a further revision to the State Manual Instructions.

HCFA's interest does not stop with screening. Since 1978, we have made it clear that the cost incurred for the epidemiological investigation necessary to identify the sources of lead contamination for individuals with undue lead absorption is a reimbursable service under the Medicaid program.

Our manual guidance is consistent with statements of the Academy of Pediatrics which reported in Pediatrics in March 1978 and included in the Academy's periodicity schedule which we use as a guide.

According to State reports of EPSDT program performance in the last fiscal year, of 11.5 million children enrolled in the Medicaid program, 4.8 million were under age 5. Of these children, we estimate that over 3 million received EPSDT screening services. However, although the blood level assessment is an EPSDT component, we do not disaggregate EPSDT data to the level of specificity which would show either the lead screenings performed or the findings nationally.

Now, Mr. Chairman, the subcommittee expressed an interest in litigation about the provision of lead screening services. We are aware of only one lawsuit. Last December, a coalition of environmental, poverty law and civil rights groups filed a lawsuit against the California Department of Health Services contending the State had not complied with Medicaid program requirements on lead poisoning detection. Beyond this information, HCFA is not aware of any further action taken either in that suit or in others.

Thank you for the opportunity to appear. I will be pleased to answer any questions you may have.

Mr. WAXMAN. Thank you Mr. Hiscock. We will now hear from Dr. Rosen.

STATEMENT OF JOHN F. ROSEN

Mr. ROSEN. I'm the current chairman for the Centers for Disease Control's Advisory Committee that is looking into revising CDC's 1985 Statement on the Prevention of Childhood Lead Poisoning. Today, I am pleased to accept your invitation to testify as Professor of Pediatrics at Montefiore Medical Center in the Albert Einstein College of Medicine.

Given the medical scientific knowledge of lead's impact on human health at remarkably low concentrations and the pervasiveness of these effects widely throughout the U.S. population from the developing fetus to workers in lead industries, I must characterize lead exposure and poisoning in the United States today as a national health crisis.

Approximately 10.5 million children less than 7 years of age are at great risk, because they live in pre-1959 housing that contains the highest concentrations of leaded paint. Young children live in at least 40 million residential housing units where there is an extant inventory of at least 3 million or more tons of highly leaded paint. These households, on average, each contain approximately 110 pounds of leaded paint.

An additional 4 million U.S. children less than 5 years of age live in old housing, where the highest potential risk for exposure to leaded drinking water is also present. Collectively, approximately 400,000 pregnancy outcomes annually are also at risk, as a result of impairments of fetal development, when maternal blood lead values exceed 10 micrograms per deciliter. Therefore, approximately 20 percent or more of this Nation's children less than 5 years of age are at high risk for developing adverse health effects of lead.

This already large number of the Nation's children will increase significantly because CDC's advisory committee has recently recommended a downward revision of from 25 to 10 micrograms per deciliter as a new definition of risk, namely lead poisoning.

EPA's Clean Air Scientific Advisory Committee has already placed itself on record as indicating that this is the maximum blood lead level for an individual child to achieve in the United States. And a forthcoming document from the National Academy of Sciences will further endorse this new cutoff.

It's important to point out that lead is a multimedia toxicant and provides significant toxic risks even when source specific inputs, by themselves, appears to be relatively modest. All sources of lead are integrated systematically into critical target tissues and the margin of safety is noted earlier, unlike virtually every other pollutant known to man is extremely narrow. Increasingly lower and lower levels of lead are now recognized as posing unacceptable risks of toxicity to the developing fetus and young child. Despite the global effects of lead in diverse groups, I will focus the rest of my testimony on the pediatric age group.

Lead has marked effects on early childhood development demonstrated by deficits in scores in the Mental Development Index and in the Bayley Scales of Infant Development. Pre- and postnatal effects of lead have been shown to have detrimental effects as low as seven micrograms per deciliter. These studies have yielded consistent results in identifying the link between low level lead exposure during early development and later neurobehavioral performance. A downward shift in the internal distribution of IQ scores for a population of children will result in approximately 50 percent more children scoring in the borderline range of IQ's of approximately 80.

Studies have demonstrated that preterm deliveries are significantly related to maternal lead concentrations. For each 10 micrograms per deciliter increase in material blood lead values, birth weight decreases from a low of 58 to a high of 601 grams. Furthermore, the duration of gestation is affected by lead exposure at blood lead concentrations well below 15 micrograms per deciliter.

In addition, toxic biochemical effects of lead on hemoglobin and vitamin D production have been demonstrated unequivocally as low as—at blood lead values as low as 10 micrograms per deciliter. Furthermore, in a study at our own center we have shown that the blood lead values themselves may underestimate markedly the body burden of lead. We have been using a new state-of-the-art type of instrumentation referred to as x-ray fluorescence which measures directly and quantitatively and safely the concentration of lead in the superficial area of the shin bone and we have shown that very mildly elevated blood lead values in children are that their bone lead values are very similar to those of lead workers in industry.

Based upon this summary, I have the following recommendations:

The lead paint problem is nationwide and strategies must be developed promptly and given the highest priority to address this issue directly through national legislation. Though the Lead Paint Poisoning Prevention Act was passed 20 years ago, which reduced substantially introduction of new lead into the environment, the Federal Government has failed, almost completely, to reduce old lead exposure from tons of leaded paint that currently exist in residential housing. This national program should include and expand upon initiatives focused on public health, the environment and elimination of leaded paint in high risk housing as recently presented by Secretary Sullivan and promulgated in CDC's recent Strategic Plan.

Mr. Waxman. Dr. Rosen, the rest of that statement will be in the record.

Mr. Rosen. Fine.

[The prepared statement of Mr. Rosen follows:]

Prepared Statement of John F. Rosen, Professor of Pediatrics, Montefiore Medical Center, Albert Einstein College of Medicine

I am the current Chairman of the Centers for Disease Control's Advisory Committee that is collaboratively revising CDC's 1985 "Statement On The Prevention Of Lead Poisoning In Young Children." Today, I am pleased to accept your invitation to testify as Professor of Pediatrics at Montefiore Medical Center and The Albert Einstein College of Medicine in New York.

Given the knowledge of lead's impact on human health at remarkably low concentrations and the pervasiveness of these effects widely throughout the U.S. population, from the developing fetus to workers in lead industries (Mushak et al., 1989A; Mushak et al., 1989B; Crocetti et al., 1990; Bellinger et al., 1987; Davis and Svendsgaard, 1987; Dietrich et al., 1989; Bornschein et al., 1989; McMichael et al., 1988; McMichael et al., 1986; U.S. ATSDR, 1988A; U.S. ATSDR, 1988B; U.S. EPA, 1986), I must characterize lead exposure and poisoning in the United States today as a national health crisis.

About 10.5 million children less than 7 years of age are at great risk, because they live in pre-1959 housing that contains the highest concentrations of leaded paint (U.S.ATSDR, 1988; Mushak et al., 1989B). Young children live in at least 40 million residential housing units, where there is an extant inventory of 3 million of more tons of highly leaded paint (U.S.CDC, 1991). These 40 million plus households, on average, each contain about 110 pounds of leaded paint. An additional 4 million U.S. children less than 5 years of age live in old and new housing, where the highest potential risk for exposure to leaded drinking water is present. In the aggregate, about 400,000 pregnancy outcomes annually are at risk, as a result of impairments of healthy fetal development, when maternal blood lead values exceed 10 μg/dl (U.S.ATSDR, 1988B; Crocetti et al., 1990; Bellinger et al., 1987; Dietrich et al., 1989). Collectively, therefore, about 20 percent of this nation's children, less than 5 years of age, are at high risk for developing adverse health effects of lead.

Lead is a multimedia toxicant and provides, collectively, significant toxic risks even when source specific inputs appear, by themselves, to be relatively modest (U.S.ATSDR, 1988A; Mushak et al., 1989A). All sources of lead are integrated systematically into critical target tissues; and the margin of safety, unlike other pollutants, is extremely narrow. Furthermore, increasingly lower and lower levels of lead are now recognized as posing unacceptable risks of toxicity to the developing fetus and young child. Despite the global effects of lead in diverse groups within the U.S. population, the rest of this discussion will focus on adverse health effects of lead in children, the most common and totally preventable disease in the pediatric age group (U.S.CDC, 1991; U.S.ATSDR, 1988A, 1988B).

Lead has marked effects on early childhood development demonstrated by deficits in scores on the Mental Development Index and Bayley Scales of Infant Development (Bellinger et al., 1987; McMichael et al., 1988; Dietrich et al., 1989). Prenatal and postnatal affects of lead have been shown at blood lead values as low as 7 μg/dl. These studies have yielded remarkably consistent results in identifying the link between low level lead exposure during early development and later neurobehavioral performance. A downward shift in the internal distribution of Mental Developmental Indices for a population of children will result in 50 percent more children scoring in the borderline range of 80 (Mushak et al., 1989A).

Several studies have demonstrated that preterm deliveries are significantly related to maternal blood lead concentrations (McMichael et al., 1986; Dietrich et al., 1989; Bornshchein et al., 1989). For instance, for each 10 μg/dl increase in maternal blood lead, birthweight decreased significantly from 58 to 601 grams. Davis and Sverdsgaard (1987) concluded that the duration of gestation is affected by lead exposure during pregnancy at blood lead concentrations below 15 μg/dl. Later growth in childhood, in terms of height, weight and chest circumference, is also adversely affected by lead at concentrations between 5 to 35 μg/dl (U.S.ATSDR, 1988A).

Besides these early childhood toxic effects of lead on neurobehavioral indices and other parameters of growth and development, toxic biochemical effects of lead on hemoglobin and vitamin D production and liver detoxification mechanisms have been observed at blood lead values as low as 10 μg/dl (Mushak et al., 1989A; Rosen et al., 1988; Saenger et al., 1984). Furthermore, it is important to point out that blood lead values in mildly lead poisoned children can markedly underestimate the magnitude of body stores inlead-paint-poisoned children (Rosen et al., 1989, 1991). In a prospective study at our Center, we have shown that lead poisoned children less than 7 years of age have already achieved body burdens of lead, measured by the L-x-ray fluorescence method for quantitating bone lead stores safely and noninvasively, similar to those in adults and in workers in lead industries (Rosen et al., 1989, 1991).

Based upon this summary, the following recommendations are considered to be necessary and timely:

(1) The lead paint problem is nationwide; and strategies must be developed promptly and given the highest priority to address this issue directly through national legislation. Though the Lead Paint Poisoning Prevention Act was passed 20 years ago, which reduced substantially introduction of new lead into the environment, the Federal Government has failed, almost completely, to reduce old lead exposure from the tons of extant leaded paint in residential dwellings. This national program should include and expand initiatives focused on public health, the environment and elimination of leaded paint in high risk housing as recently presented by Secretary Sullivan and promulgated in CDC's Strategic Plan For The Elimination Of Childhood lead Poisoning (U.S. C.D.C., 1991).

(2) Lead in drinking water, already a significant source of exposure, becomes even more important to control as thresholds for lead exposure and toxicity endpoints are adjusted downwards. Therefore, I recommend that EPA be compelled by Congress to adopt a maximum containment level [MCL] of 5–10 parts per billion, measured at the tap, coupled to the recognized benefits of corrosion control.

Based upon cost benefit analyses carried out by CDC (U.S. CDC, 1991) and EPA (U.S. EPA, 1990), a Congressionally mandated Federal effort to eliminate childhood lead exposure from leaded paint and water will yield, conservatively, an annualized benefit of at least $4.2 billion in terms of net medical and societal savings. Stated differently, for each delay of 24 hours to initiate desperately needed federal programs, about $11.5 million dollars of net medical and societal benefits are lost forever (see Table 1). Not to invest these net benefits in the minds and bodies of America's children, our most cherished future resource, indicates that a choice was made to sacrifice the full growth potential of millions of U.S. children.

TABLE 1.—NET BENEFITS OF LEAD PAINT ABATEMENT PROGRAMS AND ADOPTION OF CORROSION CONTROL AND A TAP WATER MCL OF 10 PARTS OR LESS PER BILLION

I. Net Benefits of Abatement (Total of abatement minus total costs of abatement) of all pre-1950 lead painted units (80 percent of Pre-1950 Housing Contains Leaded Paint).

(A) If Carried Out Today: $48.6 Billion; (B) If Carried Out Over Next 20 Years: $28 Billion (present value U.S.C.D.C., 1991).

Benefits include: Relationship between lead exposure and IQ (Needleman and Gatsonsis, 1990), Effects of IQ on wage rate, Impact of lead on education attainment, Impact of education on wage rate, links between education, labor force participation and earnings, Lifetime earnings, Benefits of preventing prenatal lead exposure and Actual costs of abatement (U.S. CDC, 1991).

II. New Benefits of Corrosion Control And Source Water Reduction To Achieve A MCL Of 10 PPB (EPA, 1990).

Annual National Benefits: Lower Bound: $1.0 Billion; Upper Bound: $6.3 Billion.

(1) Benefits associated with avoidance of: medial treatment of children, deficits in child IQ (remedial educational/lost earnings, changes in adult blood pressure [medication]).

(2) Includes benefits associated with reduced risk of cardiovascular outcomes associated with reductions in lead exposure: heart attack, stroke, and death from heart disease.

Mr. **Waxman**. We have to move on. Mr. Prenney, I would like to hear from you next.

STATEMENT OF BRAD PRENNEY

Mr. **Prenney**. Mr. Chairman, my name is Brad Prenney, I'm the director of the Childhood Lead Poisoning Program in the Massachusetts Department of Public Health and I appreciate the opportunity to come down here today to testify about the Massachusetts program.

Childhood lead poisoning and lead paint in housing are serious problems in Massachusetts. Sixty percent of housing stock, over 1 million housing units are estimated to contain lead paint. In some of our cities 90 percent of the housing, mostly rental property was built prior to 1950, a period when lead paint was widely used.

Each year we identify about 1,000 children with lead poisoning in Massachusetts. Now, despite the considerable work ahead of us Massachusetts have achieved tangible results over the past decade in dealing with the problem of childhood lead poisoning.

First, we have reduced the incidence of the—of lead poisoning to less than 4 cases per 1,000 children screened. And we have the ability to provide prompt and adequate followup to the vast majority of children who have been identified with lead poisoning.

Second, we have achieved widescale screening of children for lead poisoning.

Third thee is a general awareness by the public of lead poisoning and the requirements of the State's lead law.

Fourth, there is general acceptance by the public of the intent in mandate of the lead law to prevent childhood lead poisoning.

Fifth, there has been abatement of a relatively substantial and growing number of housing units compared to other States and localities.

Sixth, we've established an infrastructure on which to promote widescale preventive abatement of housing.

And finally, there is the existence of a developing partnership between public and private interests in the State of Massachusetts to deal with this problem.

And we have accomplished this because of the State's commitment to carry out, I think, two broad mandates contained in our comprehensive State Statute which was passed in 1971 and most recently amended in 1988. These are first to find and treat children who are already lead poisoned and second it's to prevent further cases of childhood lead poisoning.

Massachusetts commits over $2 million in State and Federal funds each year to the State's lead program to find and provide followup services to cases of lead poisoning.

Last year 234,000 children were screened for lead poisoning, 53 percent of the entire childhood population. A mandatory universal screening requirement and the provision of comprehensive case management services helps insure that lead poisoned children are both identified and properly treated.

Over the past several years we have begun to make real progress in fulfilling our second mandate as well, the prevention of lead poisoning. Changes to the State's lead law in 1988 have laid the groundwork for the establishment of both programs and requirements which have, and will, promote preventive abatement of lead paint in housing in the future.

First, the establishment of formal training and licensing programs for lead paint inspectors and abatement contractors has resulted in both improved quality and increased quantity of services being available to the public. Over 300 lead paint inspectors and a comparable number of contractors are currently licensed in Massachusetts.

Second, a deleading technology program has been established to evaluate and promote safer and less expensive methods of abatement. Over the past 9 months we have been evaluating polymer coatings as a method of abating lead painted surfaces.

Third, a property transfer notification requirement in effect since 1988 has assured that buyers and sellers are informed about lead poisoning and the requirements of the lead law at the most opportune time, the point of transfer of property.

And finally, financial assistance to property owners is slowly becoming a reality in a State that is facing a severe—a severe downturn. Coupled with the State tax credit of $1,000, an additional $5 million in resources will be available, we hope by early next year which could conceivably leverage an additional $20 to $30 million in private funds.

Now, beyond the public health benefits, there are other concrete benefits to our efforts to foster preventive abatement. First, energy savings are found through window replacement, the most common method of abatement of windows.

Second, abatement creates jobs and provides opportunities for a transition into the general construction trades.

Third, lead paint abatement stimulates the economy, especially in the depressed areas.

Fourth, abatement and compliance lowers insurance costs and decreases liability.

And finally, abatement improves housing and represents a reinvestment in our innercity communities.

Federal programs can assist States such as Massachusetts in several different ways. First, direct support for activities is needed. By supporting States in the forefront of program development and implementation the Federal Government not only advances that State's efforts, but also creates model programs which can be transferred to other States and localities.

Second, Federal programs should be leading the way in research and development of improved testing and lead inspection and abatement technologies.

And finally, Federal programs should be taking the lead role in educating and informing other States and localities about what works and what doesn't. State programs represent laboratories in which successes and failures become important learning tools.

I brought along a number of supporting documents, Mr. Chairman, I would be happy to share them with the committee and thanks again for the opportunity to come down here to testify.

[The prepared statement of Mr. Prenney follows. Attachments referred to may be found in subcommittee files.]

The Commonwealth of Massachusetts
Executive Office of Health and Human Services
Department of Public Health
State Laboratory Institute
305 *South Street, Boston, MA* 02130-3597
617-522-3700, Fax 617-522-8735

William F. Weld
Governor
David P. Forsberg
Secretary
David H. Mulligan
Commissioner

- **Childhood Lead Poisoning Prevention Program**
800-532-9571

Testimony of Brad Prenney, Director of the Childhood Lead Poisoning Prevention Program Massachusetts Department of Public Health to the Health and the Environment Subcommittee

April 25, 1991

In Massachusetts 60% of the housing stock, over one million housing units, are estimated to contain lead paint. In some Massachusetts cities over 90% of the housing, most of it rental, was built prior to 1950, a period when lead paint was widely used.

About 1,000 Massachusetts children are identified with lead poisoning each year. We expect that thousands more children will be diagnosed with the disease when the Centers for Disease Control issues its Statement lowering the threshold at which children are considered poisoned. The effects of the disease can be both serious and long-term. In areas of the state in which lead poisoned children are routinely referred for developmental evaluations, about half of the children end up requiring at least some services. Although urban children are at highest risk, the disease is found throughout the state. About 25% of cases are in owner-occupied homes and 30% of cases are in rural and suburban communities. For poor, inner-city children the disease adds insult to injury in that many of these children and families suffer from a host of other health and social problems including poor nutrition, lack of access to medical care, other illnesses, unemployment, poor education, etc.

Over the past two decades Massachusetts has strived to address this problem. The cornerstone of its efforts has been a strict and comprehensive statute, first passed in 1971 and most recently amended in 1988. Further changes in the State's Lead Law are anticipated which we hope will improve and advance it.

The Massachusetts Lead Program, created by statute, was established in 1974. It has had two fundamental goals; first, the identification and treatment of children who are already lead poisoned and second, the prevention of further cases of lead poisoning. For most of the program's history its focus has been on the first goal. Over the past several years efforts have increased in primary prevention. Amendments to the Lead Law have laid the foundation for the establishment of programs and requirements which have already resulted in an increase in preventive lead paint abatement. These programs, which will be described in detail later include:

1. The training and licensing of lead paint inspectors and contractors;
2. establishment of a process for evaluating new lead paint abatement technologies;
3. widespread education through notification at the time property is transferred; and
4. financial assistance to property owners to help finance the cost of deleading.

Massachusetts commits over $2 million in state and federal funds to identify and treat cases of lead poisoning. Screening children for lead poisoning is one of the more important activities. Last year 234,000 children were screened for lead poisoning, 53% of the entire childhood population. Testing of children for lead poisoning in Massachusetts is successful in large part because of the commitment of the health care provider community. Samples are drawn by hundreds of different health care providers. Testing is done primarily at the State's Lead Laboratory free of charge. Widespread and routine testing has been assured by the establishment of a mandatory, universal screening requirement in 1990. This regulation requires that health care providers screen children at specified time intervals and that they determine the risk status of children to determine if certain high risk children should be screened more frequently. Mandatory screening will not help children who do not regularly see a health care provider, however. Children who do not regularly receive health care are often those most at risk for lead poisoning. Massachusetts has attempted to reach these children by supporting door-to-door screening efforts in urban areas. This will be accomplished this year through funding provided by a Centers for Disease Control grant.

Once identified with lead poisoning, children are provided with medical and environmental followup services coordinated through an extensive and comprehensive case management system. Nurses, environmental lead paint inspectors, family lead counselors, visiting nurses, and social workers often are involved in providing services to these children and their families. Regulations and specific safeguards have been established to help ensure that children already poisoned are not further exposed to dangerous levels of lead by way of the lead paint abatement process itself.

The identification and abatement of lead paint in housing is driven by the State's Lead Law which requires that all residential property where young children reside be in compliance, that is, have no lead paint that is accessible to young children. Property owners are strictly liable for any damages which result from their failure to abate lead paint hazards. Not knowing that there was lead paint in the dwelling is no defense should a child become lead poisoned and suffer damages. Therefore, liability is a primary incentive to identify and abate lead paint in housing. Although property owners are responsible to abate lead paint hazards, concern over liability is also felt by financial lenders, insurers, and realtors.

To promote compliance with the State's Lead Law Massachusetts passed a series of statutory amendments which has formed the basis for future preventive abatement of lead paint in housing. A cornerstone of this effort is the property transfer notification requirement established in 1988. Sellers and real estate agents are required to inform prospective purchasers about any knowledge they may have regarding lead paint in the dwelling, provide a copy of a notification package prepared by the State about the Law and lead poisoning, and afford the prospective purchaser at least 10 days to have a lead inspection performed on the property. This requirement has ensured that the issue of lead paint is brought up at the most opportune time, the point of transfer.

Massachusetts has further attempted to promote abatement by developing an infrastructure upon which widescale lead paint abatement can take place. The establishment of formal training and licensing programs for lead paint inspectors and abatement contractors has resulted in improved quality of services being available to the public. About 250 lead paint inspectors and a similar number of contractors are currently licensed in Massachusetts. Regulations have been promulgated that attempt to protect workers and occupants during abatement without imposing unnecessary costs and requirements.

A Deleading Technology Program has been established to promote safer and less expensive methods of abatement. To that end, a Task Force established last August has been evaluating encapsulants (e.g. polymer coatings) as a means of abating lead paint hazards. The recommendations of the Task Force and the process established for evaluating and approving these products could have application nationally. Approval of these products could significantly lower the cost of abatement and decrease the use of dust-generating methods of abatement.

We have promoted the incorporation of lead abatement into general housing rehabilitation and renovation and intend to focus over the next several years on educating the general construction trades about the dangers of lead paint and the importance of following safe work practices.

Despite limited state resources, a tax credit of up to $1,000 per housing unit has been available to property owners since 1989 to help pay the cost of deleading. Recently, $5 million in additional resources has been identified and commited to assist property owners. Through interest subsidies, direct loans, and loan guarantees, an additional $20 million - $30 million in private funding for lead abatement could be leveraged. Additional contributions are being sought from private lenders and insurance companies writing homeowner policies.

Not the least important of the efforts to promote abatement has been the attempt to enlist the participation of important private and public interests affected by the Lead Law in jointly and cooperatively seeking solutions.

Despite the considerable work ahead of us, Massachusetts has achieved tangible results over the past decade in addressing the problem of childhood lead poisoning. These results include:

1. Reducing the incidence of lead poisoning to between 3 and 4 cases per 1,000 children screened and the ability to provide prompt and adequate followup to the vast majority of children identified with lead poisoning;
2. widescale screening of children for lead poisoning;
3. general acceptance by the public of the intent and mandate of the Lead Law to prevent childhood lead poisoning;
4. general awareness by the public of lead poisoning and the requirements of the Lead Law;
5. abatement of a relatively substantial and growing number of housing units compared to other states and localities;
6. establishment of an intrastructure on which to promote widescale preventive abatement of housing; and
7. existence of a developing partnership between public and private interests to address the problem. This has been reflected in the constructive and cooperative discussions between state government, the advocacy community, realtors, bankers, and insurers on needed changes to the Lead Law.

The public health benefits from these results alone should justify our efforts. Several years ago the Conservation Law Foundation published a report that estimated that $11,000,000 in medical and special education costs would be saved if we could prevent the 2,000 cases of lead poisoning that occurred in 1987. No attempt was made to estimate the costs of lost future earnings although these are thought to be considerable. Our efforts become more important as we learn more about the effects of lead at ever lower levels. No one knows what the incidence of lead poisoning in Massachusetts would be absent our efforts. Certainly, we have prevented and lessened the impact of thousands of cases of lead poisonings at a considerable savings to the Commonwealth and the potentially affected families.

There are other benefits as well which offset the $4,000 - $5,000 estimated average cost to abate a typical 5-6 room apartment. Approximately half the cost of abatement is directed to windows. Abatement is usually achieved by window replacement. In many homes, window replacement helps conserve heat, thereby saving on energy costs. Depending on the condition of the windows, the savings can amount to as much as $500 per year, thereby recouping costs within 4 to 5 years. Property owners recapture much of the cost of window replacement at the sale of property as well.

Over the past two years more than 1,000 individuals have taken approved training courses and obtained licenses to become lead paint inspectors and abatement contractors. Many of these represent new jobs that did not exist before. For many of the contractors, lead paint abatement also provides the opportunity to make a transition into the construction and remodeling trades. As we move away from traditional removal methods of abatement to replacement, the skills required become more those of skilled construction trades.

Abatement not only creates jobs but stimulates the economy as well, generating income for the state in the form of sales and income taxes, and customers for local businesses.

Abatement decreases liability and lowers insurance costs for property owners.

Increasingly, abatement is seen as improving housing and is beginning to be reflected in the value of that housing. The potential benefits associated with abating lead paint in inner-city housing extend to improving substandard housing generally and investing in urban communities.

Federal programs can assist states such as Massachusetts in three different ways.

First, direct support for activities is needed. Massachusetts is grateful for the support provided by the Centers for Disease Control through a $450,000 grant to assist us in identifying lead poisoned children and in providing prompt and comprehensive services to them and their families. The U.S.EPA has also been providing staff support to assist Massachusetts in its efforts to develop a process for evaluating and approving encapsulants as a method of abating lead paint. EPA is expected to provide a grant to the University of Lowell in Massachusetts to perform laboratory studies of encapsulants as well. By directly supporting states which are in the forefront of program development and implementation, the federal government not only advances that state's efforts but also creates model programs which can be transferred to other states and localities. Another area in which Massachusetts would benefit from federal support is conducting residential field studies to assess dust generation from various types of abatement and renovation activities (e.g. window replacement). This would provide us and the nation with the necessary data to establish abatement procedures and techniques which minimize costs without sacrificing minimum safety standards for workers and occupants.

Second, federal programs should be leading the way in research and development of improved inspection and abatement technologies. In instances in which states have taken a leading role in R & D, such as Massachusetts' evaluation of encapsulating coatings, federal programs should be providing needed levels of support.

Finally, federal programs should be taking the lead role in educating and informing states and localities about what works and what doesn't. State programs, such as in Massachusetts, represent laboratories in which successes and failures have direct relevance to those states and localities which will need to grapple with similar problems and issues if they are to seriously address this problem. Federal programs are in a unique position to take the best states have to offer and fashion model programs and approaches.

Mr. **Waxman**. Thank you, Dr. Prenney.

I would like to thank all of you for your testimony. Let me start my questions with Dr. Rosen. You're the chairman of the Advisory Committee on Childhood Lead Poisoning which is established by the Centers for Disease Control.

The advisory committee is made up of leading health experts on lead poisoning. The advisory committee met 2 days ago to consider recommending that the threshold for lead poisoning be reduced substantially. The current standard for lead poisoning is a blood level of 25 micrograms per deciliter of blood. The advisory committee is now recommending that the standards for lead poisoning be reduced by 60 percent to a level of 10. Could you explain why the advisory committee recommends lowering the threshold for lead poisoning?

Mr. **Rosen**. The major force behind those recommendations, again, I want to underline that it's an advisory committee to CDC, the major force behind those recommendations are based upon remarkable coherence in the scientific and medical literature relating more specifically to neurotoxic effects of lead which have been amply demonstrated in studies across the world, including several respective studies in the United States which indicate very clearly that there are neurotoxic effects of lead at least down to blood lead concentrations of 10.

That does not necessarily imply that even a blood lead value of 10 micrograms per deciliter is necessarily safe. Future research forthcoming in the years to come may indicate that there is no threshold for such effects of lead in children.

And I want to emphasize that the advisory committee's recommendation is based upon extremely solid coherent and overwhelmingly supported evidence in the medical and scientific literature, some of which I summarized in my statement.

Mr. **Waxman**. Now, to look at the significance of this new standard of 10 micrograms which represents a greater adverse impact from lead, much broader and at lower levels than what we had expected. EPA advises us that under the old standard of 25, 1 percent of the children under age 6 would be considered to be poisoned by lead. How many children would be considered to be poisoned if the threshold is lowered to 10?

Mr. **Rosen**. This is hard to specifically estimate. According to the so-called ATSDR report in 1988 roughly 17.2 percent of children 1 to 5 years of age had blood lead values that are 15 micrograms per deciliter or greater. So that what the impact will be in terms of redefining new screening techniques, new screening methods is unclear. Based upon the data in New York City, it's estimated that approximately 10 to 15 fold more children will be entering the health care system for management of childhood lead poisoning.

Mr. **Waxman**. EPA prepared new estimates of the numbers of children with lead levels over 10 in 1990 and these figures update their earlier work based on 1984 statistics. They estimate that in 1990, 15 percent of the children had blood lead levels of 10 or greater. This would mean that, under the new standard that the advisory committee recommends over 3 million children—nearly one 1 of every 6 are lead poisoned. This is very sobering testimony. You clearly are correct when you say, and I quote from your testimony, "lead exposure and poisoning in the United States today is a national health crisis."

Dr. Houk could you comment on the significance of the proposed new definition of the lead poisoning.

Mr. **Houk**. Yes. As I say, we will be reviewing the data for the adverse neurologic effects on children at 10 micrograms, which I think is compelling in relation to Mr. Dannemeyer's question in his opening statement. I think it is fair to say that the opinion is unanimous that adverse health effects occur at 15 micrograms. There is not unanimity down to 10, but the evidence is very strong.

We will have precise numbers for you, Mr. Waxman, in 1992 when the Third National Health and Nutrition Assessment Survey is done.

Mr. **Waxman**. We would really be pleased to receive that for the record, but let me———

Mr. **Houk**. But at a minimum it will be about 4 million children in this country between the ages of 9 months through the age of 5 who have blood leads in excess of 10 micrograms at this moment. And I think that's a minimum figure.

Mr. **Waxman**. A minimum of 4 million children?

Mr. **Houk**. Yes.

Mr. **Waxman**. Well, that's a staggering number. This problem is clearly immense.

Mr. **Houk**. Mr. Waxman, it's staggering. Remember last year I made a comment before this subcommittee when we used the words "societally devastating" because it is—what lead does in these children. Is that no children? No child who has a moderately elevated blood lead is going to have a superior intelligence and I can't think of anything worse for society than a population of children without any geniuses.

Mr. **Waxman**. Well, I now want to look at what we can do about this problem, because clearly it's an immense problem and this has not been the first time the Congress has looked at the whole question. Let me start off to look at the specific measures that could be taken.

We've heard from Massachusetts that they've taken some measure that were tremendously important for people like June and Krystle Fandel, the most obvious measure would be to simply know about it and then disclose the risks that Ms. Fandel testified she knew her apartment contained lead paint, she could have taken steps to protect Krystle, that's obvious.

Mr. Prenney, Massachusetts has a disclosure requirement that applies to real estate transactions. Could you briefly describe what that requirement is? Why Massachusetts adopted it and how it's working?

Mr. **Prenney**. Well, Mr. Chairman, when a special legislative study commission met in 1986, one of the big concerns they heard about from property owners was when they bought property they didn't realize what the lead law requirements were and issues around lead poison. So the notification requirement was really a way of informing buyers and sellers of what their obligations are. So, any seller of property or a real estate agent is supposed to provide a prospective purchaser a copy of a packet that the Department of Public Health has prepared and also afford that prospective purchaser 10 days to have a lead paint inspection done.

Now, under our law it's the buyer's responsibility if there are going to be children under the age of 6 living in that property to have it abated and brought into compliance. Basically this is a voluntary compliance program. And what is does is make sure that the parties at that transaction understand what their responsibilities are and the issues around lead poisoning.

Mr. **WAXMAN**. Ms. Fisher, you're in charge of EPA activities. Would EPA support a requirement that real estate brokers and landlords inform consumers about the lead risks in a home before selling or renting the home?

Ms. **FISHER**. Congressman, a couple things. First of all, it's my understanding that HUD is actually looking at some kind of disclosure as private property is transacted as part of their plan. I don't know where they are thinking in terms of actually mandating it, or if they've come to a decision.

Mr. **WAXMAN**. That would be just for HUD homes, is that correct?

Ms. **FISHER**. Well, they're looking at private housing too—how to approach notification in private housing. As part of our plan, we at EPA are going to put together a public communication and education plan which would help homeowners or renters determine whether or not there is lead in their home, or in the rental unit. We have not looked at whether, through our own authorities we could require that kind of disclosure. It fits more with housing authorities.

Mr. **WAXMAN**. Well, as a matter of fact, I think it's the other way around. I don't think HUD has the statutory authority to do that. But I think EPA does. And if you had the statutory authority, or if you didn't we would be happy to assure you of that.

Don't you think that it would be more sensible to have a disclosure required rather than simply public education?

Ms. **FISHER**. I think disclosure would go a long way to helping people at least take steps to protect themselves.

Mr. **WAXMAN**. Okay. Well, that would be helpful and let's look at legislation that may be needed or if legislation is not needed, see what we can do to get you to move on that at EPA. Yes, Dr. Houk?

Mr. **HOUK**. Mr. Chairman, I believe the Lead-Based Paint Poisoning Prevention Act of 1972 and its provisions are still on the books which require that no house may be transferred and assisted with Federal financial assistance in any manner. And broadly interpreted this applies to all the Freddie Macs, and the Ginnie Maes. Since there are not very many houses transferred in the mortgage market without Federal financial assistance. And your staff may want to look at that provision.

Mr. **WAXMAN**. Well, we'll have to look at that, because that may include many or few houses, but we want to make sure it includes all houses and apartments that are not for sale, but for rental as well.

The Massachusetts program sounds like an excellent one and we ought to be telling States that they must adopt similar kinds of proposals. Or do you think the Federal Government ought to require it across the country?

Ms. **Fisher**. We're doing a couple of things. One is we are developing model accreditation programs that States could put into place and actually we are working with the State of Massachusetts and a couple others that are already moving ahead. So hopefully in the next couple years EPA will be able to provide States a lot more information than we have today about how to set up programs.

Mr. **Waxman**. Maybe we have a situation where States can tell EPA what to do rather than for States to wait for EPA.

Ms. **Fisher**. I think——

Mr. **Waxman**. One idea is disclosure, but the other would be to look at abatement workers having the training.

Ms. **Fisher**. That's right.

Mr. **Waxman**. What are you doing in that regard?

Ms. **Fisher**. We are developing a training program for workers and for supervisors, people that are going to do abatement work. Once we get the training program developed—and we are already working with States such as Massachusetts—we are going to be working with universities so it can be made available nationally.

Mr. **Waxman**. Are you proposing to require that this be done nationally, or is it simply just to give out information?

Ms. **Fisher**. We are not at this point proposing to have it done nationally. In abating asbestos, schools are required to use accredited personnel. What we are looking at setting up is a training and accreditation program so that properly trained people will be available, but we have not looked at mandating that all workers that do this type of work actually be trained.

Mr. **Waxman**. My time for this round of questioning has expired, but just to close off, I just don't think we ought to leave these things so vague. I think we ought to have Federal requirements and make sure that the job is going to be done. Unless we have requirements, there is no assurance that we're not going to be coming back here in another couple years, to find out that the threshold of 10 was not adequate and we have even more of a tragedy than we now have.

I'm going to ask for a second round after Mr. Dannemeyer has completed because I'm going to go into drinking water issues. We've already had decades of experiences where we were told things were going to be done and nothing ever happened.

Ms. **Fisher**. Congressman, I just wanted to say that I don't disagree that people should be using properly trained contractors to do this work at all.

Mr. **Waxman**. Well, how could anybody disagree with that?

Ms. **Fisher**. I don't.

Mr. **Waxman**. I'm going to have to move on to Mr. Dannemeyer.

Mr. **Dannemeyer**. Thank you. Dr. Houk, I take it that the primary portion of the human body where the lead does its damage is in the neurological system, is that a correct assessment?

Mr. **Houk**. The developing brain, that is the target organ, yes.

Mr. **Dannemeyer**. But I think Dr. Graef told us that most of our brains stopped developing at age 5 and beyond that——

Mr. **Houk**. Well, and that's the reason, Mr. Dannemeyer, that we're very concerned that children be screened through 6 years of age.

Mr. **Waxman**. The fifth grade what he said.

Mr. Houk. The effect of lead on the adult is primarily on the kidney, on the cardiovascular system, and hypertension. The adult's brain can tolerate orders of magnitude more lead than can the child's brain.

Mr. Dannemeyer. Tell me about the testing technology that we have today in detecting the presence of lead that you suggest should not be tolerated beyond?

Mr. Houk. Before when we were at 25 micograms per deciliter we had a relatively inexpensive instrument to measure erythrocyte protoporphyrin, if that were positive then you would do blood lead. At the levels we have now, we're going to have to do a blood lead measurement. There are in excess of 400 laboratories in this country which are tested every month, that we've demonstrated can measure blood leads accurately down to about 12 micrograms per deciliter. It costs about $20 to $30. It's not inexpensive, but neither are the consequences of lead poisoning in children.

Mr. Dannemeyer. Did I hear you say that we can measure it down to 12?

Mr. Houk. We can measure it accurately down to 12 in the standard laboratory that the lead screening programs are using. In the research laboratories and others we can accurately measure it down to about 3 or 4 micograms per deciliter.

Mr. Dannemeyer. And there is suggestion, I think, by CDC to change this to the level 10, is that right?

Mr. Rosen. In term of the advisory committee's recommendation, yes.

Mr. Dannemeyer. And if we can measure it successfully, maybe I misunderstood there or something, that we can measure successfully down to 12. If the standard is 10 do we have a problem in terms of measuring?

Mr. Rosen. To me the major issue in—that you've raised is that the instrumentation is out there, it's commercially available to measure lead at the concentrations of concern that we're discussing today, to measure those levels very accurately. The major limiting factor, in my own opinion is the analytical expertise and discipline that's needed now within laboratories would have to be tightened up considerably in terms of technical expertise, quality assurance and quality control and those new standards can be met with current instrumentation. It is now a human technical limitation, not an instrument limitation.

Mr. Houk. Mr. Dannemeyer, 3 years ago if you asked the same question I would have said that most of the laboratories can measure accurately down to 30 micrograms per deciliter. One of our major commitments of knowing we're going to have to lower the blood lead is to develop the laboratory capacity in this country to do that. We are now at 12. Now at this moment I sit here with a goal of down to about a 5 within a year from now.

Mr. Dannemeyer. Now, we've had a law that says we can't have lead in paint for almost 20 years now. We no longer have—well, we still have some leaded gasoline, but most of it has been phased out. If we're still finding lead in children and in adults for that matter, where do you think it's coming from?

Mr. Houk. Most of the lead is coming from our past use of lead and our past practices. We have 40 million houses in this country with lead in the course of leaded gasoline from 1926 until EPA phased it out in 1980, I believe there were 6½ million metric tons of lead added to our environment that is still in the environment.

Once lead is——

Mr. **Dannemeyer**. Now, wait a minute——

Mr. **Houk** [continuing]. In our environment it doesn't go away.

Mr. **Dannemeyer** [continuing]. You lost me there a minute ago.

Mr. **Houk**. I'm sorry?

Mr. **Dannemeyer**. If we phased out lead from the gasoline in 1980 is it still in the atmosphere?

Mr. **Houk**. No. But it's in the soil and the child picks up the soil in the normal hand-to-mouth activity, the dust gets in that way. The soil and the dust are contaminated from air emissions of lead, from primarily gasoline, unless you are around a fixed site, and from the lead-based paint. The dust in the soil and the lead-based paint are important. We need to keep from adding new lead to the environment as best we can because once it gets in the environment it doesn't go away.

Mr. **Dannemeyer**. Now, as a practical matter, I think people—the ages of the homes in which we live in this country vary all over the place. In the eastern part I suspect we have many older homes, in the west we have some not so old. But in the older homes that had paint that predated 1972 there is probably some of that lead paint still on the wall, maybe two or three coats underneath what is visible to the naked eye.

Mr. **Houk**. Of course.

Mr. **Dannemeyer**. Is that lead paint on the wall in these older homes still a hazard to living in those homes?

Mr. **Houk**. Yes. A characteristic of paint is that it dusts. The first layer goes off microscopically—otherwise the paint will get dirty very quickly—and the contents of that goes down in the form of house dust.

Mr. **Dannemeyer**. Even if that lead paint has been covered by another layer of paint?

Mr. **Houk**. It will ultimately dust off, yes. Even though lead paint was banned from manufacture in 1978, it is still possible in the discount market to buy lead paint for residential use. Stuff that was made before 1978 is now in the discount stores.

Mr. **Dannemeyer**. Thank you very much, Mr. Chairman.

Mr. **Waxman**. Thank you, Mr. Dannemeyer. Dr. Houk, I was surprised to hear that. I thought we had banned the sale of lead paint, but evidently——

Mr. **Houk**. We banned the sale of paint that contains more than 6 percent lead that was manufactured before June 26, 1978, it's a manufacturing date.

Mr. **Waxman**. So, are they manufacturing new lead paint?

Mr. **Houk**. They're not manufacturing it, Mr. Chairman.

Mr. **Waxman**. They're selling the old ones?

Mr. **Houk**. They're selling what was in the market still, you know, the huge stocks. And then in addition to that, one of the big problems is that particularly along the coastal areas a painter will add white lead to the paint to give you a real good paint job. This is where the lead screening programs come in, because we intensively look at all of those things. Until there are standards nationally the people that get lead grants from us are required by regulation to start the development of a hazard abatement standard. To start the development of a law in their local community for housing codes, housing ordinances, because all of these things are extremely important if we are going to do something about this problem.

Mr. **Waxman**. Well, don't you think we have to do it at the national level and create requirements rather than just send out information locally or through hearings. Maybe people are unprotected in other parts of the country.

Mr. **Houk**. Whether we need a national law or not, I will leave to others, but in order to have standard practice among all the lead grantees we, by regulations require that they address certain of these issues because just simply telling people about it is not enough. In addition, the young lady we had before us may have been detected through some of our lead projects before she got that way, because one of the important parts of the lead screening programs is to go out and search out the children.

We have found that if we search out the children in the high risk groups, we find three times as many with lead toxicity as if we wait for the child to come in to us. And we find them earlier so that we can do something hopefully about it earlier.

Mr. **Waxman**. Well, we do have children under the Medicaid program which covers at least some of the poorest of the poor, that are supposed to be covered for lead screening. Under the EPSDT part of Medicaid they're supposed to be tested, and then have care provided for them if the testing finds high lead levels.

Mr. Hiscock, in 1989, Congress codified the regulations of EPSDT, which explicitly required lead blood tests as part of the program. What is HCFA doing to see that these services are being provided to poor children? What surveys have you conducted? What enforcement actions have you taken?

Mr. **Hiscock**. Well, Mr. Chairman, this summer we are undertaking a complete program review of each State's implementation of OBRA 1989 changes to, expansions of, or requirements for the EPSDT program. We are developing and have had discussions with our technical advisory group and the regional offices about a program review guide. One of the elements in that program review guide specifically is the blood lead level assessment. What the——

Mr. **Waxman**. Let me interrupt you. In 1989? This is already 1991.

Mr. **Hiscock**. Yes, sir.

Mr. **Waxman**. We changed the law and put it in the statute. But before that, the regulations required that there be lead screening——

Mr. **Hiscock**. Yes, sir.

Mr. **Waxman**.—as part of the Medicaid program. Now, let me ask you, what percentage of children under Medicaid have been screened for lead?

Mr. **Hiscock**. As I said in my testimony, we do not disaggregate the data to that level of degree. What we did early on was clarify the instructions in the State Medicaid manual to apply the principles the CDC offered from the Lead Poison Prevention Grant. And, there has been a general regional office/State interaction, but nothing formal until this review.

Mr. **Waxman**. So you have no idea how many children have been screened?

Mr. **Hiscock**. No, sir.

Mr. **Waxman**. You don't know how many of them have been poisoned?

Mr. **Hiscock**. No, sir.

Mr. **Waxman**. Do you have any idea whether the States are doing any screening for lead poisoning or taking care of children for lead poisoning?

Mr. **Hiscock**. Yes, sir. We do.

Mr. **Waxman**. What do you know?

Mr. **Hiscock**. As a matter of fact, we followed up on the California situation to find out what instructions and rules Dr. Kaiser's department had put out to the counties and to see that he was alerting physicians.

Mr. **Waxman**. Aside from California, are all other States enforcing the law, do you know?

Mr. **Hiscock**. That's our assumption until this review is completed.

Mr. **Waxman**. Well, in other words you assume all States are following the law, even though you have the responsibility to ensure State compliance?

Mr. **Hiscock**. Our responsibility is to see how the States are monitoring the program.

Mr. **Waxman**. Dr. Rosen, do you have any idea how well they are doing under the Medicaid program?

Mr. **Rosen**. In New York City I would say that it's generally a total failure. The only children in New York City who are routinely screened are children in Head Start Programs.

Mr. **Waxman**. Let me tell you what's happening in California. In California they had an investigation as a result of a law suit to try to force the State to live up to the Medicaid law. The Federal Government didn't have the time or wasn't doing it. And so the Court looked to see if California was doing what they were required by law to do found that only 300 children in the entire State were screened for blood lead as a part of the EPSDT program; 290 of these were in a single county and were performed by one doctor.

And even though black children are statistically higher at risk, only 2 of the 300 tests were performed on black children. There are approximately 600,000 Medicaid eligible children under the age of 5 alone in California and I have to ask you, and Mr. Dannemeyer as well, how this could happen, how could it happen without HCFA knowing anything about this complete lack of services.

Do you have any answer to that, Mr. Hiscock?

Mr. **Hiscock**. As I said, we do not get into each examination and that's information we would certainly need to follow up on.

Mr. **Waxman**. Okay.

Mr. **Rosen**. Mr. Chairman, could I interject?

Mr. **Waxman**. Yes, Dr. Rosen.

Mr. **Rosen**. Just one other statement. So far panels have been dealing with human costs at a very compassionate and passionate level. I think ultimately one also has to look at dollar costs. I've looked with my rough Hewlett Packard calculator, looking at CDC's strategic plan in terms of eliminating lead-based paint in pre-1959 housing as well as looking at a recent cost analysis that was carried out by EPA in 1990.

The annualized benefits, these are net benefits, minus costs are roughly $4.2 billion a year that are being lost in net medical and societal savings. Every single day that Congress or the Federal Government and all of us collectively delay facing the lead paint problem in the United States approximately $11.5 million are being lost every single days in terms of net medical and societal benefits.

Mr. **Waxman**. That's astounding. Let me just ask for the record, Mr. Hiscock, has HCFA ever taken a single step to enforce the requirement that lead poisoning screening and treatment be given to all poor children? Have you ever threatened to cut off funds to a State, to file suit, even written an angry letter?

Mr. **Hiscock**. We've taken steps, early on, in terms of bringing State folks to, for example, CDC's program in Louisville to education technical assistance steps.

Mr. **Waxman**. But how about enforcement? Any enforcement actions at all?

Mr. **Hiscock**. In enforcement, a specific issue of compliance or being out of compliance has not been raised in our system.

Mr. **Waxman**. Okay.

Mr. **Hiscock**. We have taken compliance actions in other aspects of the EPSDT program.

Mr. **Waxman**. Okay. Well, this answers the question, thank you.

Mr. **Hiscock**. Let me—Mr. Chairman——

Mr. **Waxman**. Excuse me, we have a limited time and I do want to get into the drinking water questions and I see that my time on this round is about to end so I'm going to have to either go for a third round or ask for more time. We do have a Federal law on drinking water.

We do have a Federal requirement that water systems all over the country have some way to protect the American public, especially children, from lead exposure in drinking water. This is something we didn't leave to somebody else. This is something we, the Federal Government, by law, made clear was our responsibility.

Now, Ms. Fisher and Mr. Elder you're both here from EPA. Ms. Fisher is not even involved in drinking water, Mr. Elder is new to take over the responsibilities in the drinking water area.

So, I don't mean for you to take any of these questions or obvious harsh comments about the actions of EPA personally, but I would like us to look at this record of EPA dealing with this problem. Lead contamination in drinking water afflicts some 30 million American children, leads to over a million cases of lead poisoning per year, according to CDC. So we all agree that lead in drinking water is a hugely important problem. It's not the only way lead contaminates kids, but it's an important way that kids are contaminated. But it's difficult to imagine a more abject regulatory failure than the effort to reduce lead in drinking water.

Fourteen years ago, in 1977, the National Academy of Science recommended that EPA cut its lead standard under the Safe Drinking Water Act in half, from 50 parts per billion to 25. Nine years later in 1986, the lead standard remained unchanged, and in legislation originating with this subcommittee, Congress mandated that the Agency act to set a new standard within 3 years, by June 1989.

We mandated it 2 years later when EPA still had not acted. This subcommittee was developing the Lead Contamination Control Act, EPA came before our subcommittee and proclaimed that a tough new drinking water lead rule was among the Agency's highest priorities and it would be issued by the end of the year. That was 1988. Well, we withheld enforcing action, now it's 3 years later, long after the timeframe contemplated in the 1988 testimony, nearly 2 years after the statutory deadline, 14 years after the National Academy of Science's recommendation and the lead rule is still not out.

The Agency is now under a court order to produce the regulation by the end of this month and a rule is expected in a matter of days. This is after Congress mandated it, the EPA people probably knew at the time as well, now gone on probably to richer pastures, told us the thing was going to be done. Well, one might expect now that the court order and the rule is going to be issued by the end of this month that we would be uncorking champagne bottles in celebration. The Agency provided the subcommittee a draft of the new rule and unfortunately it's certainly nothing to celebrate.

In fact, the rule does not tighten the drinking water standard for lead at all. Incredibly it eliminates the standard entirely, establishing a treatment technique program. Mr. Elder, under the Agency's new lead rule, there will be no longer any limit on the permissible level of lead in drinking water, is that correct?

Mr. **Elder**. Mr. Chairman, I wouldn't view it exactly that way. I agree with you that the MCL that had been 50 will be eliminated, but in lieu of that we will be instituting a 15 part per billion action level that would be a trigger for what public water supply systems would have to do.

Mr. **Waxman**. Is there a maximum level of lead that would be permissible in drinking water anywhere in this country?

Mr. **Elder**. Not in the sense of a maximum contaminant level. No, sir.

Mr. **Waxman**. Okay.

Mr. **Elder**. But I believe the new standard would be 10 times more effective than the existing 50 MCL.

Mr. **Waxman**. Well, wait, I want to look at that with you in a minute, but first of all I want to see whether there's any standard so the people know that the drinking water will at least be required to meet that standard. If there is no standard, children can be exposed to levels of lead that would be illegal under the current standard, say a level of 80 parts per billion and such contamination levels would be entirely lawful under this new EPA proposal. Isn't that correct? You don't think it will happen, but wouldn't it be unlawful if it did happen?

Mr. **Elder**. It is conceivable that it could happen in 10 percent or less of the homes in a given community's water supply.

Mr. **Waxman**. But it could be even higher and it would be legal, since there is no maximum level.

Mr. **Elder**. I don't believe that it would be acceptable if it was greater than 10 percent.

Mr. **Waxman**. Well, I don't see this whole history of EPA action as acceptable. You can see I'm rather agitated about the whole thing. I don't understand the Agency's so-called action level because it does not protect 10 percent of the households with the worse lead problems. If less than 10 percent of the consumers of a particular water system have extremely high lead levels, then corrosion control, which is the way this new rule is supposed to work, may not even be required, isn't that correct?

Mr. **Elder**. That is also possible, but if the action level is exceeded, as the rule is currently drafted, there would be a requirement for lead service lines to be replaced to the point where the measurement level got down to the 15 parts per billion or below.

Mr. **Waxman**. Well, that's assuming you have a maximum contamination level that protects everybody. Now, you're going to switch to this corrosion control technology or technique and immediately say that 10 percent can be excluded from protection and they can be exposed to higher levels.

Last September, the EPA Inspector General's office produced a report that was extremely critical—now, this is your own Inspector General, of the Agency's Implementation of the Lead Contamination Control Act, and one of the criticisms was that EPA had created confusion regarding what constitutes an acceptable level of lead in drinking water.

Mr. Elder, do you think that this new proposal is helpful in this regard?

Mr. **Elder**. I certainly think it will be a major step in the proper direction. Certainly there are going to be people that think another approach might be better. I think you have a certain difficulty here in that most of the lead contamination problem in drinking water arises—after water leaves the control of the drinking water provider and gets into the distribution system.

Mr. **Waxman**. My question is, if there's confusion about what constitutes an acceptable level of lead in drinking water and that was what your Inspector General said was part of the problem with the way EPA was handling this lead problem, you're now saying that there will be no level maximum control contamination level for lead. It seems to me that if that was a criticism, this is not going to be helpful, it's going to create more confusion. The new rule will only add to the confusion generated by 14 years of EPA in action.

With the new CDC lead poisoning definition, concerned parents all over the Nation, will, we hope, be paying more attention to their children's lead exposure and many will be testing their drinking water contamination levels. And they will need to know how much lead is too much. So, the schools are going to probably do this as well. And they're going to want to know how much lead is too much. What is the answer to that question? What's the acceptable level of lead in drinking water? The EPA rule provides absolutely no guidance. What guidance would you give these parents?

Mr. **Elder**. I may not be prepared to answer that, but if the 15 part per billion action level is exceeded, there is a required public education campaign on the part of the public water system. In these cases the home owner would have the option to change the faucets in their home, replace the lead service lines from the point under the control of the community.

Mr. Waxman. You're talking about people already educated?

Mr. Elder. Well, the public education program would be required if the action level were exceeded.

Mr. Waxman. And what are they going to be told is the standard that's going to be protective of their kids' mental and physical well being?

Mr. Elder. We're trying to pay attention to whatever the Center's for Disease Control say, the 15 part per billion action level is equivalent to 1 to 2 micrograms per deciliter, so I think in terms of the 10 number that's been talked about at your hearing today——

Mr. Waxman. Is that a health standard?

Mr. Elder. No, it is not a health standard.

Mr. Waxman. So you're not going to have a health standard?

Mr. Elder. We would not have an MCL.

Mr. Rosen. Could I try to answer that question——

Mr. Waxman. Yes, Dr. Rosen.

Mr. Rosen In terms of child health? I would urge that an MCL be established that be no greater than 10 parts per billion, measured at the tap, associated and coupled to corrosion control. And that is the way to protect the public health. And I would say, or my own opinion is that what has been enunciated by EPA is 25 steps backwards toward protecting children and the health of people in general.

It has to be an MCL, it has to be measured at the tap to protect individuals.

Mr. Dannemeyer. Mr. Chairman?

Mr. Waxman. Yes.

Mr. Dannemeyer. May I inquire at that point: If we had a requirement that the maximum tolerable limit be enforced at the tap, how do we reach the supplier of water with that requirement? Because this is——

Mr. Rosen. The supplier can be reached through appropriate corrosion control at the source and can be measured——

Mr. Dannemeyer. Because some of the problems that come into the water come into the water as it goes through the pipes of the residence, doesn't it?

Mr. Rosen. That's true, yes.

Mr. Dannemeyer. How can we fix the supplier of the water with the responsibility that takes place inside the house?

Mr. Rosen. But corrosion control coupled with an MCL measured at the tap can solve, in large part, I believe, the concern that you've raised.

Mr. Waxman. In fact, I would like to insert in the record a September 1987 EPA internal memo that examines two lead control options that rely on standards for lead at the tap. The only question under debate at that time was whether the standard would be 10 parts per billion or 20.

And funny how in other areas our technological ability moves forward, while in the case of measuring lead in drinking water, we knew how to do it in 1987, but in 1991 we don't seem to know.

[Testimony resumes on p. 126.]

[The information referred to follows:]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

SEP 29

OFFICE OF
WATER

MEMORANDUM

SUBJECT: Level 1 Options Selection: Lead - Proposal of Maximum Contaminant Level Goals (MCLGs) and National Primary Drinking Water Regulations (NPDWRs)

FROM: Lawrence J. Jensen
Assistant Administrator for Water (WH-556)

TO: Addressees

PURPOSE

An Options Selection Meeting will be held on October 6, 1987, from 9:00 am to 10:30 am in Room 1101WT. The purpose of the meeting is to discuss the major issues involved in proposing a Maximum Contaminant Level Goal (MCLG) and revised National Primary Drinking Water Regulations (NPDWRs) for lead under the Safe Drinking Water Act. An interim MCL of 50 ug/l was established for lead in 1975. An MCLG for lead was proposed on November 13, 1985, and will be reproposed along with an NPDWR which includes either an MCL (or a treatment technique) and monitoring, reporting and public notification requirements. The issues and options are presented in this memorandum; additional detailed information is attached.

STATUTORY AUTHORITIES

Under the SDWA, EPA must propose MCLGs simultaneously with MCLs or a treatment technique in lieu of the MCL if it is not feasible to ascertain the level of the contaminant. MCLGs are to be set at a level which, in the Administrator's judgment, "no known or anticipated adverse effects on the health of persons occur and which allows an adequate margin of safety." Section 1412(b)(4).

The MCL is required to be set "... as close to" the MCLG "as is feasible." 1412(b)(4). For the purposes of this subsection of the SDWA, "... the term "feasible" means feasible with the use of the best technology, treatment techniques,

and other means which the Administrator finds ... are availat
(taking cost into consideration)." 1412(b)(5). In addition, the legislative history directs EPA to set MCLs based upon technologies affordable by large metropolitan communities using relatively clean water.

Future use of lead solder, pipes and flux are prohibited by §1417 of the SDWA. "Any pipe, solder, or flux which is used...in the installation or repair of- (A) any public water system, or (B) any plumbing...providing water for human consumption which is connected to a public water system, shall be lead free..." §1417(a)(1).

BACKGROUND

There are numerous sources of lead exposure from the environment. In addition to drinking water, these are from air, dust and dirt, and food. Past EPA regulation of lead has reduced the amount of lead contributed to total exposure from each of these non-drinking water sources. The Office of Air and Radiation has reduced lead in gasoline (lead phase down) and ambient air quality standards for point source emissions of lead. These regulations have substantially reduced direct airborne exposure, dust and dirt lead and resultant exposures, and lead in food resulting from deposition from the air. The Food and Drug Administration has also reduced the use of lead soldered cans for food, and so reduced food lead levels.

As a result of these activities, overall lead exposure has declined considerably over the past 15 years. As a result of the reductions in other lead exposures, the contribution of drinking water to total lead has increased in relative significance; and additional regulation of lead in drinking water is clearly warranted.

Lead in drinking water is a result of two sources: (1) raw water supplies and (2) corrosion of plumbing materials in the water distribution system. Most of the lead in drinking water is a result of corrosive water and lead plumbing materials which include (see Figure 1):

- lead goosenecks or pigtails
- lead service lines
- lead solders used to connect copper pipes
- brass faucets

The severity of lead contamination of drinking water is dependent not only on the corrosivity of the source water, but also on the type and age of plumbing materials and contact time. Lead pipes are the most significant long-term source of lead in drinking

BEST COPY AVAILABLE

water, but new lead solders can also contribute significant levels for up to two to five years. In addition, brass faucets have also been shown to be a considerable source of lead in drinking water.

Virtually all public water systems have households with lead solders of varying ages and most faucets are made of materials that can contribute some lead to drinking water. Table 1 presents key facts regarding corrosivity, the existence of lead service pipes, and public water systems.

Table 1
Lead Facts

- Lead pipes were mostly installed prior to 1920 (although some were installed as recently as one or two years ago). Public water systems may have from zero to 80% lead service connections (Chicago has about 80%). One study estimated that an average across the country for medium to large systems is about 10%.
- Approximately 34,000 public water systems (i.e., 58%) serving 42 million people have at least moderately aggressive water.
- Approximately 4.4 million lead service connections are currently in place, in about 16,000 public water systems. Approximately 8,700 of these systems serving 2.6 million people have at least moderately aggressive water.
- The natural attrition rate for lead pipes is very low. Longer than 50 years use is easily attainable and replacement is usually because of ground disturbances which can crack the pipes. Some communities, such as Akron, Ohio, already have accelerated lead service line replacement programs in place.
- Lead solders/fluxes impart the most lead into drinking water during the first two years after use and less after five years. New lead solder can result in water lead levels greater than 2,000 ug/l.
- Lead contributions from lead pipe can continue throughout the use of the pipe.
- Brass water fixtures contribute lead to first draw water.

Two primary methods exist for reducing lead levels in drinking water. Because all water is corrosive to some degree, minimizing water corrosivity is the first step of any program to reduce lead in drinking water. The next step would be to replace lead service lines if necessary. Additional methods of reducing lead exposure include public education, and the use of bottled water.

ISSUES

The major issues to be addressed in the Options Selection meeting are:

1. What level should be established for the MCLG for lead?
2. What should be the treatment basis of the enforceable standard? (Corrosion control only or corrosion control plus lead service line replacement?)

DISCUSSION OF ISSUES

Issue #1: What level should be established for the MCLG for lead.

Option #1: Set the lead MCLG at zero, based on the occurrence of a variety of low level effects for which it is currently difficult to identify clear threshold levels below which there are no risks of adverse health effects.

Option #2: Set the MCLG at a non-zero value based on protecting the most sensitive and overall most exposed group (from all sources) from established adverse effect levels for lead. MCLG = 8 ug/l.

Recommendation: Set the MCLG at zero.

Rationale: As discussed below, risks of adverse health effects in young children appear to be most likely at blood lead (PbB) levels above 15 ug/dl and in fetuses at PbB levels of 10 to 15 ug/dl. However, the possibility of effects extending to lower levels cannot be dismissed. Whether these effects represent medically significant or "adverse" effects is highly uncertain at present. At very low levels, lead is associated with biochemical changes in enzymatic systems at the cellular level. However, these effects are not necessarily adverse health effects. There is some uncertainty regarding the point at which subtle changes in cell chemistry of different types combine and compound in a manner and of sufficient magnitude so as to cause a discernable adverse effect on an organ or systems in the body. With increased lead exposure, effects become more pronounced and broaden to additional biochemical and physiological mechanisms in various tissues, causing more severe disruptions of the normal functioning of many organ systems.

There are also data indicating that, at very high exposure levels, lead may have carcinogenic potential. CAG has given lead a tentative weight of evidence classification (Group B2) as a potential carcinogen, because some lead compounds cause renal tumors in test animals in very high dose tests. However, CAG recommends that quantitative estimates of the carcinogenic potentcy of lead not be published or used for the purpose of risk assessment, because of the considerable uncertainty in the estimate.

The MCLG should be set at the level that would assure no adverse effects. Given the possibility of health effects, however uncertain in terms of biomedical significance, at levels below 15 ug/dl in young children and 10 ug/dl in fetuses, where the risks of adverse effects become more likely, and the precautionary nature of the SDWA, an MCLG of zero is the option that would best represent an aspirational goal for lead in drinking water.

Issue #2: What should be the treatment basis for the enforceable standard?

Option #1: Corrosion control only, based on reduction of lead levels to approximately 20 ug/l, at a cost of $20-80 per household annually, and national annual costs of $780 million and capital costs of $1.65 billion.

Option #2: Corrosion control plus partial lead service line replacement, based on reduction of lead levels to approximately 10 ug/l, at annual household costs of $5-40 and total national annual costs of $85-180 million and capital costs of $1.3-2.6 billion, in addition to corrosion control costs.

Recommendation: Corrosion control plus lead service line replacement.

Rationale: Corrosion control and lead service line replacement are technically feasible, if economically acceptable. Together, they provide a basis for an MCL of about 10 ug/l, which is as close to the recommended MCLG as could possibly be considered feasible. The data base for concluding that either 10 ug/l or 20 ug/l is nationally achievable is weak, particularly for the 10 ug/l level. Part of the problem with the 10 ug/l level is that only that portion of the lead pipe owned by the water system will be required to be replaced, which is roughly half the pipe. The contribution of lead from the remaining portion of the pipe is not well documented.

The costs of replacing the entire pipe for all lead service lines in the country is $6.6 billion; replacement of only the water system portion of each lead service is $2.6 billion. It is most likely that not all lead services will need replacement. A capital cost of $1.3 billion was estimated based upon the assumption that the water supply portion of 50% of all pipes would be replaced.

The MCL with this option, 10 ug/l, would provide more public health protection than corrosion control alone, and would provide greater assurance of minimum exposure to lead from drinking water. The capital costs (see Table 2) of achieving 10 ug/l would about double that of achieving 20 ug/l, but the annual costs would only increase about 10-20%.

Table 3 presents estimated benefits of the application of corrosion control. A very rough calculation suggests achieving levels of 10 ug/l with corrosion control and lead pipe replacement might result in an increase in benefits up to three times that achieved with corrosion control alone.

With an MCL of 10 ug/l there would be fewer children at risk of having blood lead levels of 15 ug/dl as compared to a standard of 20 ug/l because the water contribution of total exposure would be somewhat less. The entire distribution of drinking water lead levels would shift downward, including the inevitable outliers, which would reduce exposure for the most exposed individual as well as those less exposed.

Setting the MCL at 10 ug/l would also be protective against some low level effects which are not now considered adverse. Provision of a greater margin of safety would appear to be warranted because of the possible significance of low level effects of lead. Although blood lead levels at which risks of adverse health effects in young children may have been identified, the possibility of effects extending to lower levels cannot be dismissed (whether these effects represent medically significant or adverse effects is highly uncertain at present; future research may clarify this issue). Therefore, setting an MCL at the lowest feasible level is justifiable as a more conservative measure. Additional data will be collected during the public comment period to further evaluate the feasibility of this suggested MCL.

Attachment A provides details on each of the above issues including advantages and disadvantages of each of the options. The Primary Drinking Water Regulations Work Group has reviewed a draft of this memorandum. Should any additional information be needed, please contact Joseph Cotruvo or Craig Vogt of the Criteria and Standards Division at 382-7575.

Attachments

Addressees:

Deputy Administrator
Associate Administrators
Assistant Administrators
Inspector General
General Counsel

Table 2

Summary of Treatment Costs

	Corrosion Cost	Lead Pipe Replacement	Total of Corrosion Control plus Lead Pipe Replacement
Household Annual Cost	$20-80	$5-40	$25-120
National Capital Cost	*$1.65 billion	$1.3-2.6 billion	$2.95-4.25 billion
National Annual Cost	*$780 million	$85-180 million	$865-960 million

*Includes $150 million capital and $22 million annual costs for non-community, non-transient water supplies assuming 50% install treatment.

Table 3

Net Annual Benefits of Corrosion Control
(Estimated reduction to 20 ug/L)

	Reduced Numbers at Risk	Monetized Benefits
Children	1.1 million	$110-300 million
Adult Males	130,000	$290 million
Plumbing Materials Savings		$530 million
TOTAL BENEFITS	1.2 million	$930 million-1.12 billion
Estimated Costs		$780 million
Net Benefit		$150-$340 million

ATTACHMENT A

SEP 29 1987

ISSUE #1: What level should be established for the MCLG for lead.

In November 1985 EPA proposed an MCLG of 20 ug/l for lead using the following approach:

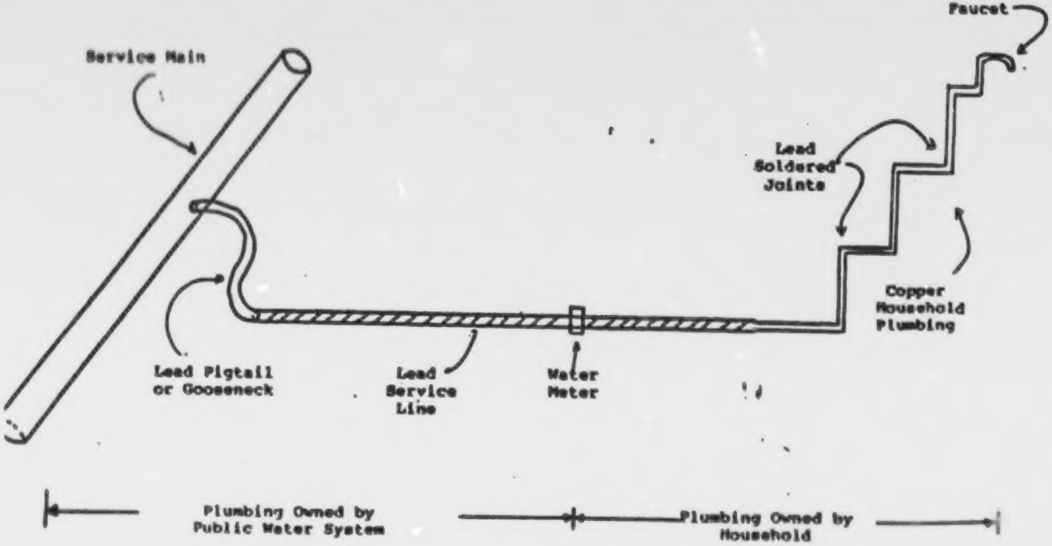
- identify the sensitive population and establish the adverse effect level for that group;
- determine the reference dose, and apply an appropriate uncertainty factor, weight and water consumption for children;
- determine the contribution of drinking water to overall exposure to lead, and determine a correlation factor to estimate the relationship between lead in drinking water and blood lead levels.

In the November 1985 proposal, children in general, and neonates in particular, were identified as the sensitive population to be protected from lead exposure. An adverse effect level of 15 ug lead/dl (deciliter) blood (PbB) was estimated, based on a variety of effects, including lead's adverse effects on heme synthesis, interference with pyrimidine metabolism, alteration of nervous system activity, and interference with vitamin D metabolism. A safety factor of 5 was applied to the adverse effect level. A value correlating water lead with blood lead was estimated to be 0.16 for the sensitive group, and the relative source contribution for drinking water was estimated to be 100% for neonates. The proposed MCLG was 20 ug/l.

New data have been developed since the 1985 proposal which support a lowered blood lead level of concern. These studies are discussed in detail below. Other elements of the calculation have also been reviewed and revised in the interim. The correlation factor between water lead and blood lead has been revised from 0.16 to 0.2 based on an assessment of several studies of this correlation, rather than the single study which formed the basis for the earlier value. Exposures for different portions of the sensitive group have been reviewed and revised to estimate that at exposure levels contemplated for regulation for all sources, drinking water contributes about 20% of total lead exposure to 2 year old children, and up to about 60% of exposure to neonates.

Lead Exposure. There are several sources of lead exposure other than drinking water. Directly inhaled airborne lead and lead that settles out to dust and dirt from the air are important sources, especially for children. Other important sources are air deposition on food, leaching to food from lead soldered cans, and for exceptional exposures, lead paint.

Figure 1. Public Water System and Homeowner Plumbing


Service Main
Faucet
Lead Soldered Joints
Copper Household Plumbing
Lead Pigtail or Gooseneck
Lead Service Line
Water Meter
Plumbing Owned by Public Water System
Plumbing Owned by Household

The Office of Air and Radiation (OAR) has a National Ambient Air Quality Standard (NAAQS), for lead, which it is in the process of revising. The current NAAQS established in 1978, is 1.5 ug/m3, based on concern about blood lead levels of 30 ug/dl. The NAAQS was based on an estimate of the national distribution of blood lead levels, and modeled to reduce 99.5% of the exposed population's blood lead level to below the blood lead level of concern. OAR is currently revising its standard, but is retaining this approach.

Significant reductions in lead exposure have occurred over the past 15 years as a result of OAR's reductions of lead in gasoline (lead phasedown), and additional reductions are expected with implementation of the final step of the lead phasedown program, and with the new NAAQS for lead from point sources. Population average blood leads have dropped from about 15 ug/dl to about 8 ug/dl as a result of these standards.

In addition, numerous local community health programs monitor the blood leads of children and identify high risk housing and assist with remediation of lead paint problems.

The Food and Drug Administration has required use of non-lead soldered cans for babyfoods, and encourages food processors to eliminate the use of lead soldered cans. The program for non-babyfood items is still voluntary, and no monitoring of lead-soldered can use is conducted.

The multiple sources of lead exposure in the environment indicate the desirability of developing an EPA-wide, or Federal Regulatory Agency-wide strategy for reducting lead exposure. An Agency-wide strategy would consist of detailed analyses of sources of lead exposure, followed by a coordinated regulations review and development program.

Statutory Authority

MCLGs are to be set at a level which, in the Administrator's judgment, "no known or anticipated adverse effects on the health of persons occur and which allows an adequate margin or safety." Section 1412(b)(4). The legislative hiertory provides the following further guidance on selecting these levels: [t]he recommended maximum level... must include an adequate margin of safety, unless there is no safe threshold for a contaminant. In such a case, the level should be set at zero level [House Report No. 93-1185, July 10, 1974, at 20]. The MCLG is an aspirational, nonenforceable ideal that is used as a lower limit from which the enforceable MCL is developed. The MCL is set as close to the MCLG as is feasible. Water suppliers must assure that tap water meets the MCL.

BEST COPY AVAILABLE

Health Effects

Lead exposure across a broad range of PbB levels is associated with a continuum of pathophysiological effects, including interference with heme synthesis, anemia, kidney damage, impaired reproductive function, interference with vitamin D metabolism, impaired cognitive performance (as measured by IQ tests, performance in school, and other means), delayed neurological development, and elevations in blood pressure (EPA, 1986). At this time, it is difficult to identify clearly what PbB level would be an appropriate criteria or "threshold" level, below which there are no or only minimal risks of adverse health effects. The following considerations are important in determining a target PbB of concern in setting a MCLG:

(a) PbB levels above 30 ug/dl in young children are associated with clearly deleterious effects in several organ systems which are either individually or collectively seen as being adverse (EPA, 1986).

(b) At levels below 25-30 ug/dl, many different smaller effects on neurological development and function, heme synthesis, and vitamin D metabolism might be argued as separately not being of clear medical significance, although each are indicative of interference by lead with normal physiological processes. The collective impact of all of the observed effects (representing potentially impaired functioning and depleted reserve capacities of many different tissues and organs) can, at some point distinctly below 25-30 ug/dl, be seen as representing an adverse pattern of effects worthy of avoidance with some margin of safety (EPA, 1986).

(c) The collective impact of various effects noted above might be argued as becoming sufficiently adverse to warrant avoidance (with a margin of safety) only when the various effects come to represent marked deviations from normal as PbB levels exceed 20-25 ug/dl (EPA, 1986). Alternatively, the onset of signs of detectable heme synthesis impairment in many different organ systems at PbB levels starting around 10-15 ug/dl, along with indications of increasing degrees of pyrimidine metabolism interference and signs of altered nervous system activity, could be viewed as that level worthy of avoidance.

(d) In reviewing the information presented in the 1986 Air Quality Criteria Document, EPA's Clean Air Science Advisory Committee concluded that the various effects starting at PbB lvels starting around 10-15 ug/dl in young children "may be argued as becoming biomedically adverse" (Lippmann, 1986).

(e) Newly emerging evidence indicates that fetal exposure to maternal PbB levels as low as 10-15 ug/dl, as measured by umbilical cord blood, is associated with small but statistically significant delays in early mental and physical development (EPA, 1986).

(f) In adults, several studies have found small but consistent relationship between blood lead and blood pressure, with some indications of a continuous relationship down to the lowest levels measured. The blood pressure increases may be associated with some increased risk for more serious cardiovascular disease events, especially if PbB levels are chronically elevated (Benefits Analysis, 1986).

(g) There is also evidence suggesting that even lower PbB levels may be associated with certain of the above types of effects (albeit of relatively small magnitude) and other biochemical/electrophysiological changes indicative of disruption of normal physiological processes as follows:

1. Inhibition of pyrimidine-5-nucleotidase (Py-5-N) and delta-aminolevulinic acid dehydrase (ALA-D) activity, which appears to begin at 10 ug/dl of blood lead or below (Angle et al., 1982). Hernberg and Nikkanen (1970) found 50 percent of ALA-D inhibited at above 16 ug/dl. Inhibition of erythrocyte ALA-D appears to occur at virtually all blood lead levels measured so far, and any threshold remains to be determined (EPA, 1986; pp.12-13 to 12-51.). Inhibition of ALA-D activity is manifested in increased levels of aminolevulinic acid (ALA) in blood and soft tissue, which appear to occur at about 15 ug/dl and may occur at lower levels (Meredith et al., 1978). Several studies indicate that increases of ALA in the brain interfered with the gamma-aminobutyric acid (GABA) neurotransmitter system in several ways (Criteria Document, 1986; p. 12-145 ff).

2. Elevated levels of erythrocyte protoporphyrin (EP) in red blood cells occurs at about 15 ug/dl. This probably indicates a general interference in heme synthesis throughout the body, including interference in the functioning of mitochondria (Piomelli et al., 1977). Changes in heme metabolism have been reported perinatally at blood lead levels of 8-10 g/dl (Lauwerys et al/. 1978). Some studies that accounted for iron status show that childern with low iron stores are more sensitive to lead in terms of heme biosynthesis ineterference (e.g., Mahaffey and Annest, 1986).

3. Changes in the electrophysiological functioning of the nervous system. These include: changes in slow-wave electroencephalogram (EEG) patterns, increased latencies in brainstem auditory evoked potentials (Otto et al., 1981, 1982, 1984), including slowed nerve conduction in the auditory pathway associated with PbB levels with no clearly discernable threshold apparent down to 6 ug/dl (Schwartz and Otto, 1987). Also, there is a significant negative correlation between PbB and peripheral nerve conduction velocity in children whose PbB levels range from 15 ug/dl to about 90 ug/dl (Landrigan et al. 1976).

4. Interference with vitamin D metabolism has been associated with lead across a wide range of PbB with no apparent threshold down to 12 ug/dl.

5. An association between maternal and fetal blood-lead levels and reduced gestational age, lower birth weight, and slowed early post-natal development (both physical and mental) down to 10 ug/dl PbB and possibly below (Bellinger et al., 1984; McMichael et al., 1986). Investigations of post-natal growth and stature also present evidence of a negative association in pediatric populations (Schwartz et al., 1986) with PbB levels ranging down to or somewhat below 10 ug/dl.

6. Recent studies of IQ effects in poor (low socioeconomic status) black children (Schroeder et al., 1985; Schroeder and Hawk, 1986) shown an association between IQ and blood lead analyzed across a range of 6 to 47 ug/dl EPA, 1986; p. 12-92 ff, 12-157).

7. Finally, CAG has given lead a tentative weight of evidence classification (Group B2) for lead as a potential carcinogen, because some lead compounds cause renal tumors in test animals (Farland, 1987). CAG noted that lead may act as a promoter or initiator of carcinogenesis, and that in vitro studies support the genotoxic and carcinogenic role of lead. However, CAG recommends that quantitative estimates of the carcinogenic potency of lead not be published or used for the purpose of risk assessment, because of the considerable uncertainty in the estimate. However, "lead has been observed to increase tumorigenesis rates in animals only at relatively high concentrations, and therefore it does not appear to be a potent carcinogen" (EPA, 1986). At low levels, the non-cancer effects of lead are of greatest concern for regulatory purposes.

Based on these considerations, risks of adverse health effects in young children appear to be most likely at PbB levels above 15 ug/dl and in fetuses at PbB levels of 10 to 15 ug/dl. However, the possibility of effects extending to lower levels cannot be dismissed. Whether these effects represent medically significant or "adverse" effects is highly uncertain at present. At very low levels, lead is associated with biochemical changes in enzymatic systems at the cellular level. However, these effects are not necessarily adverse health effects. There is some uncertainty regarding the point at which subtle changes in cell chemistry of different types combine and compound in a manner and of sufficient magnitude so as to cause a discernable adverse effect on an organ or systems in the body. As indicated above, with increased lead exposure, effects become more pronounced and broaden to additional biochemical and physiological mechanisms in various tissues, causing more severe disruptions of the normal functioning of many organ systems.

Issue #1: Should the MCLG for lead be set at zero or at some non-zero value?

Option #1: Set the Lead MCLG at zero.

Pros

The MCLG should be set at the level that would assure no adverse health effects. The legislative history of the SDWA indicates that in cases where there is "no safe threshold for a contaminant...", the MCLG should be set at a zero level (House Report, SDWA)*. Given (a) the possibility of health effects, however uncertain in terms of medical significance, at levels even below 15 ug/dl in young children and 10 ug/dl in the fetus where the risks of adverse effects become more likely, and (b) the precautionary nature of the Safe Drinking Water Act, a zero MCLG is the option that would best represent an aspirational goal of no health risks.

Cons

The detailed discussion of lead's effects on humans presented above concludes that a variety of biochemical effects occur at the cellular level at very low blood lead levels. While there is considerable uncertainty about the blood lead levels at which the collection of effects becomes adverse, "most likely" adverse effects levels have been identified for the sensitive populations. While they may not prove to be "right" in the long run (i.e., additional study of lead may result revision of these most likely adverse effect levels), they represent Agency concensus based on the currently available data. The most likely adverse effect level estimates therefore could provide an adequate basis for a non-zero MCLG.

While less conservative, a non-zero MCLG would be more firmly based in the available toxicity data that have been reviewed through the Agency. It would be based on current concensus estimates of the point at which lead effects become adverse, rather than on cellular level changes that may or may not be adverse. Regulation based on these levels will result in no adverse health effects (based on concensus assessment of the data), with a margin of safety, as required by the

---

*In the case of National Ambient Air Quality Standards, in contrast the legislative history of the Clean Air Act indicates that in cases where there is no safe threshold setting. NAAQS at zero would be the equivalent of a "no-risk philosophy" that ignores all economic and social consequences and would be impractical, especially because of mandatory attainment requirements within three years of setting a NAAQS, unlike the case for a MCLG.

SDWA. In addition, it would provide a point of comparison for assessing the safety of the MCL value (which ODW requires as a general policy) and for establishing the unreasonable risk to health value used for evaluating applications for variances from the MCL. It would also provide a reference point for determining the value adequate to protect the health of persons, which is required for variances from a treatment technique.

Option 2: Set the MCLG at 8 mg/L.

- o Based on recent data in neonates and young children, a LOAEL of 10 ug/dl of lead in blood has been suggested for neonates, and 15 ug/dl for young children.
- o The sensitive population is neonates and young children; the target group for protection is two year old children because of their higher overall lead exposure (higher than other parts of the sensitive group) from all sources. This group could receive approximately 10-20% of total lead exposure from drinking water if exposures from all sources are, as an average, projected to 1991, the estimated effective date of the new drinking water standards for lead. A value of 20% will be used in the calculation, consistent with the ODW policy of setting a floor for drinking water relative source contribution values.
- o Several studies correlating blood lead values with oral intake of lead have been conducted. The correlation values change with age and with total lead intake. For two year old children with estimated total lead intakes projected to 1991 (approximately 40-70 ug/day), this correlation factor is approximately 0.2.
- o Use an uncertainty factor of 2; there are good quality data in humans, and several conservative assumptions are built into the analysis.
- o Calculation of an MCLG based on these assumptions with an uncertainty factor of 2 results in an MCLG of 7.5 ug/l. This is rounded off to an MCLG of 8 mg/l.

Pros

1. This approach is consistent with past ODW approach for establishing MCLGs based on noncarcinogenic non-theshold endpoints.

2. A safety factor of 2 would appear to be the minimum that can be used, since the SDWA requires EPA to establish MCLGs with an "adequate margin of safety". The factor of 2 is adequate because the low level effects of lead have been well studied, and the LOAEL of 15 ug/dl for PbB is a relatively conservative estimate.

3. This approach would result in a goal of drinking water contributing no more than an estimated 1.5 ug/dl to total blood lead for the sensitive population.

   o An MCLG of 8 ug/L would also be protective of neonates; in fact, very young infants, ages birth to 3 months, may receive most of their lead exposure from drinking water, if they are fed formula prepared with tap water containing lead. It is assumed that children at this point of their lives do not crawl around on the floor, and therefore get very little lead exposure from house dust. This group does receive some lead exposure from breathing air. It is therefore estimated that up to 80% of lead exposure for new born children fed with drinking water prepared formula would be from drinking water. Also, the LOAEL is 10 ug/dl for neonates. Using these assumptions for neotates (with a safety factor of 2), the MCLG could be set at 20 ug/l for neonates.

Cons

1. Does not account for low level lead effects not now considered to be adverse.

Recommendation: Set the MCLG for lead at zero.

Rationale: Zero is recommended based upon the possibility of health effects (of however uncertain medical significance) at levels below 15 ug/dl for young children and 10 ug/dl in neonates, where risks become more likely, and the precautionary nature of the SDWA.

ISSUE #2: TREATMENT BASIS FOR THE ENFORCEABLE STANDARD

A. Statutory Authorities

Under the SDWA, EPA must propose MCLGs simultaneously with MCLs or, a treatment technique in lieu of the MCL if it is not feasible to acertain the level of the contaminant.

The MCL is required to be set "...as close to" the MCLG "as is feasible." 1412(b)(4). For the purposes of this subsection of the SDWA, "...the term "feasible" means feasible with the use of the best technology, treatment techniques, and other means which the Administrator finds ...are available (taking cost into consideration)." 1412(b)(5). In addition, the legislative history directs EPA to set MCLs based upon technologies affordable by large metropolitan communities using relatively clean water.

A treatment technique is to be established in lieu of an MCL "...if it is not economically or technologically feasible to ascertain the level of the contaminant." If this is the case, EPA is to "...identify those treatment techniques which...would prevent known or anticipated adverse effects on the health of persons to the extent feasible." 1412(b)(7)(A).

States can issue variances from either an MCL or a treatment technique requirement because of the characteristics of the raw water supply. Section 1415. However, the two types of variances are different:

- A variance from an MCL can be issued only after application of best available technology and cannot result in an unreasonable risk to health (URTH). A schedule to reach compliance must be included and States can require additional control measures.
- A variance from a treatment technique requirement can be issued if the treatment is not necessary to protect the health of persons. States can prescribe monitoring and other requirements as conditions of the variance.

States can issue exemptions if systems are unable to comply due to compelling factors. An exemption cannot be issued if it would result in an URTH. A schedule of compliance is to be issued with the exemption. Section 1416.

Future use of lead solder, pipes and flux are prohibited by §1417 of the SDWA. "Any pipe, solder, or flux which is used...in the installation or repair of- (A) any public water system, or (B) any plumbing...providing water for human consumption which is connected to a public water system, shall be lead free..." §1417(a)(1).

B. Problem Definition

Sources of Lead in Drinking Water. Lead in drinking water is a result of two sources: (1) raw water supplies and (2) corrosion of plumbing materials in the water distribution system. Most of the lead in drinking water is a result of corrosive water and lead plumbing materials.

In 1985, 37 of the 60,000 public water suppliers exceeded the current MCL of 50 ug/l for lead in free-flowing water. In EPA's recent National Inorganics and Radionuclides Survey, 12 of 984 groundwater samples exceeded 20 ug/l for lead in free-flowing water, 24 exceeded 10 ug/l, and 55 exceeded 5 ug/l. Lead in source waters can be reduced to levels of about 5 ug/l through application of technology at the source. Because there are no issues associated with source water contamination, this options-selection paper only addresses problems resulting from corrosion.

Lead in drinking water as a by-product of corrosion results primarily from corrosion of plumbing materials (see Figure 1):

- lead goosenecks or pigtails
- lead service lines
- lead solders used to connect copper pipes
- brass faucets

The severity of lead contamination of drinking water is dependent not only on the corrosivity of the source water, but also on the type and age of plumbing materials and contact time with water. Lead pipes are the most significant long-term source of lead in drinking water, but new lead solders can also contribute significant levels for up to two to five years. In addition, brass faucets have also been shown to be a considerable source of lead in drinking water.

Corrosivity, Lead Plumbing Materials, and Public Water Systems. Virtually all public water systems have households with lead solders of varying ages and most faucets are made of materials that can contribute some lead to drinking water. Table 1 presents key facts regarding corrosivity, the existence of lead service pipes, and public water systems.

All future use of lead solders and pipes by public water systems and in the plumbing of buildings providing water for human consumption was banned by the 1986 Amendments to the SDWA. Many states already have their own lead bans in place, some plumbing codes have already been modified, and some housing construction companies have already stopped using lead materials. All states must begin enforcing the ban on June 19, 1988.

Table 1
Lead Facts

- Lead pipes were mostly installed prior to 1920 (although some were installed as recently as one or two years ago). Public water systems may have from zero to 80% lead service connections (Chicago has about 80%). One study estimated that an average across the country for medium to large systems is about 10%.
- Approximately 34,000 public water systems (i.e., 58%), have at least moderately aggressive water.
- Of the approximately 4.4 million lead service connections currently in place, approximately 2.6 million are in areas that have at least moderately agressive water.
- Approximately 16,000 public water suppliers (or 26%) have some lead service connections in use currently. Approximately 8,700 of these systems have at least moderately aggressive water.
- The natural attrition rate for lead pipes is very low. Longer than 50 years use is easily attainable and replacement is usually because of ground disturbances which can crack the pipes. Some communities, such as Akron, Ohio, already have accelerated lead service line replacement programs in place.
- Lead solders/fluxes impart the most lead into drinking water during the first two years after use and less after five years. New lead solder can result in water lead levels greater than 2,000 ug/l.
- Lead contributions from lead pipe continue throughout the use of the pipe.
- Brass water fixtures contribute lead to first draw water.

Characteristics of Corrosivity and Variability of Lead Levels. The corrosivity of water is determined largely by the pH and carbonate alkalinity of the water. Low pHs (below 7.5) and low water carbonate alkalinity (less than 20 mg/l CO3) are generally more aggressive toward lead than waters with higher pHs (8.5) and higher carbonate alkalinity. However, all water is corrosive to some degree, even water termed non-corrosive or water treated to make it less corrosive.

Lead levels in drinking water can vary considerably from system to system, among houses supplied by a system, and between different times of day at a single tap in a household, because of different waters, different sources of lead, and different standing time. Factors that affect lead levels in water include:

- temperature of the water (hot water leaches more lead than cold water; seasonal variations in water lead levels are common);
- number and age of lead soldered joints and workmanship;
- the length of the lead service line (longer lines result in higher lead levels in water coming out of a tap);
- the contact time between the water and the lead (longer contact time results in higher lead; morning first flush water has higher lead levels than randomly drawn water or flushed water);
- amount of water drawn (smaller first draws at the tap have higher lead levels than larger draws).

These factors result in variations in exposure. For example, people drinking first flush water, especially water that has been standing in the pipes overnight, will consume considerably more lead via their drinking water than people who drink flushed water.

Treatment and Methods of Lead Reduction. Two primary methods exist for reducing lead levels in drinking water. Because all water is corrosive to some degree, minimizing water corrosivity is the first step of any program to reduce lead in drinking water. The next step would be to replace lead service lines. Additional methods of reducing lead include, public education, use of bottled water, and strict enforcement of the national ban on use of lead solder and pipe.

- Corrosion control is well known to reduce lead levels; optimization of the water to attain the least corrosive water possible can be achieved by varying such parameters as pH and alkalinity until lead levels are at their lowest. Optimal water quality will vary from system to system.
- Lead service line replacement by water systems removes the primary long-term source of lead. One complication in lead service replacement is the fact that most lead service lines are only owned up to the water meter by the public water system. The homeowner owns the portion of the lead pipe from the meter to the house (see Figure 1). Since lead

BEST COPY AVAILABLE

service lines are only partially owned by the water system, removal of the lead service line up to the meter can be required but the removal of the remaining pipe can only be suggested by regulation. EPA would suggest that water systems offer to replace the homeowner portion of the lead pipe.

- Removal of copper pipes with lead solders is not considered necessary because of the fact that lead contributions from solders decrease after two to five years.
- Public education programs can be effective. Information to be provided would include advising consumers to flush the water from household plumbing, not to use hot water for drinking or cooking purposes, and home testing procedures.

C. Issues and Options for the Enforceable Standard

The primary issue that must be resolved in order to set an enforceable standard for lead is the following:

- Should the best available technology (BAT) be corrosion control or corrosion control plus lead service line replacement?

Other issues are also important in the implementation aspects of the enforceable standard.

- Should the enforceable standard be an MCL or a treatment technique?
- What level of lead in drinking water constitutes an unreasonable risk to health (URTH)?
- How should compliance (with an MCL) be defined; i.e., should the basis for compliance be that 100% of a water system's tap be required to meet the MCL or would a lesser value (e.g. 90-95%) be appropriate?

If an MCL is set, decisions are needed on the following:

- What level should be set for the MCL (i.e., what is BAT and how is compliance defined?)
- What monitoring requirements should be set?
  - Should monitoring be directed at worst case (e.g., lead pipe) situations?
  - How many household taps should be sampled, and with what frequency?

- What specific sampling requirements should be set; i.e., overnight standing first draw, random first draw, service line sample, or combination? And what size of sample: 125 ml, 250 ml, 1 liter?

If a treatment technique were set, decisions are needed on the following:

- What is the definition of corrosion control in terms of specific treatment, design and operating parameters?
- Upon what basis (e.g., lead levels, pH, alkalinity) would systems be required to install treatment? What monitoring requirements would be needed to make this demonstration?
- What follow-up monitoring requirements would be needed to assure compliance?
- How would states enforce the treatment requirements?

Another consideration in the specific requirements of the enforceable standard includes the following:

- Should bottled water be required as an interim measure or as part of variance conditions or would public education (e.g., flush taps before drinking) be sufficient?

The OW is requesting guidance via the options-selection process on the primary issue of the treatment basis of the enforceable standard. The other issues identified above will be addressed by the OW and the Primary Drinking Water Regulation Work Group and through the normal EPA regulation development mechanisms (i.e., Red Border review). Presented below is a description of the major issue and advantages and disadvantages of the two options.

ISSUE #2: What Should be the Treatment Basis of the Enforceable Standard?

Two options are presented below as the treatment basis for the enforceable standard.

Option 1: Corrosion control.

Option 2: Corrosion control plus partial lead pipe replacement.

DISCUSSION

Before the enforceable standard for lead can be determined, the best available technology (BAT) must be selected. In this case, the choice is between (1) corrosion control and

(2) corrosion control and lead pipe replacement. Public education programs would be included under either option. Criteria for selection of BAT are based upon the SDWA directive to set MCLs as close to MCLGs as feasible. For the treatment technique, treatment is to prevent known or anticipated adverse effects on the health of persons to the extent feasible. Feasible means:

> feasible with the use of the best technology, treatment techniques, and other means, which the Administrator finds, after examination for efficacy under field conditions and not soley under laboratory conditions, are available (taking costs into consideration). Section 1412.

In addition, the legislative history directs EPA to set MCLs based upon technologies affordable by large metropolitan communities using relatively clean water.

The criteria for BAT are therefore technological feasibility and economic affordability. The SDWA does not provide for an analysis of the benefits of any particular technology in relation to its costs; however, the OW feels that this information should be at least available at the "elbow of the decision-maker".

Technological Feasibility.

Criteria used by OW include (1) demonstrated use, (2) commercial availability, and (3) engineering feasibility.

Corrosion Control: Technologies are well established to reduce the corrosivity of the water. These technologies have been demonstrated and are used in many water systems across the country. However, their specific performance is not well quantified under a variety of conditions.

Lead Pipe Replacement: Replacement of lead pipes involves replacing at least the portion of the lead service line owned by the utility with a non lead pipe.

Economic Affordability.

The OW has used the following affordability criteria in recent times (Note: OMB has not agreed to these criteria):

- Increase in annual costs due to a specific treatment not to exceed 1% of median family income (about $275 per year);
- A total annual cost for drinking water not to exceed 2% of median family income (about $550 per year).

No criteria have been discussed regarding capital costs per water system or national capital or annual costs.

Corrosion Control (see Table 1):

- Household costs vary from $20 to $80 per year based on the size of system.
- Capital costs vary from $2500 to $2 million based on the size of system. Net costs are much less (and perhaps negative) due to the extended life of plumbing systems.
- Approximately 34,000 systems may need to install corrosion control.
    - Total national capital costs are $1.65 billion.
    - Total national annual costs are $780 million.
    - These costs include $150 million capital and $22 million annual costs for 10,000 non-transient, non-community systems.

Pipe Replacement (see Table 1):

- Lead pipe replacement costs about $600 per pipe (based upon $30 per foot and 20 feet of pipe; average service connections are about 50 feet long; the PWS portion is about 20 feet.
- Costs to each system would vary greatly, because some systems have no lead services, and some have up to 80% lead services, and it is likely that not all pipes in each system would have to be replaced. If the PWS portion of all pipes were replaced, annual costs of pipe replacement, spreading costs to all households for 20 years are as follows:

% total of pipes replaced in a water system	Annual costs per Household
10%	$ 5
40%	$21
80%	$42

- Capital costs example: for a system replacing 10% of its lead pipes and serving 10,000 people, capital costs would be $2.2 million.
- Approximately 16,000 (i.e., 26%) public water systems have some lead pipes. For systems with lead pipes, the national average is estimated to be 10% lead service lines for those systems with lead services.
- In those 16,000 systems, 4.4 million lead service lines are estimated to exist.

- Total national capital costs of removing the PWS portion of all lead pipes is $2.6 billion. Removing 50% of lead pipes (PWS portion) would cost $1.3 billion.

- Total national annual costs of removing all lead pipes (PWS portion) are $180 million. Removing 50% of lead pipes would cost $85 million annually.

- Two factors are important in considering lead pipe replacement costs:

  (1) The remaining useful life of existing lead service lines is estimated to average 50 years. Thus, systems will replace virtually all pipes within 50 years. The regulations under consideration would require replacement in 15 years and therefore could be considered an acceleration of costs that would eventually be expended. Some voluntary pipe replacement programs are underway at a number of public water systems.

  (2) Depending upon the regulatory option selected, it is not expected that all lead services would have to be replaced. Some households will achieve low lead levels even with lead service lines after application of corrosion control. However, a judgment would have to be made on the extent of service line replacement by a community.

- Requiring replacement of the homeowner portion of lead pipes is probably not possible as they are not under the control of the water supplier. OGC has not found any way we could do this.

Table 1

	Summary of Treatment Costs		
	Corrosion Cost*	Lead Pipe Replacement	Total of Corrosion Control plus Lead Pipe Replacement
Household Annual Cost	$20-80	$5-40	$25-120
National Capital Cost	$1.65 billion	$1.3-2.6 billion	$3.1-4.4 billion
National Annual Cost	$780 million	$85-180 million	$865-960 million

* Includes $150 million capital and $22 million annual costs for non-transient, non-community water supplies.

Benefits: Table 2 presents estimated quantitative benefits for reduction of lead levels in water from 50 ug/l to 20 ug/l, based on BAT of corrosion control only. Additional health benefits can be expected if the MCL is 10 ug/l based on replacement of the PWS portion of lead service connections. These additional benefits have been roughly estimated to be 3 times the benefits presented in Table 2.

Corrosion Control:

- Lead levels in systems with corrosive waters may range from 50-100 ug/l up to 200-500 ug/l. Corrosion control can reduce these levels down to around 20 ug/l in first draw samples at most taps. Some systems will achieve lower levels.

Pipe Replacement:

- Lead pipe replacement will remove a portion of the primary remaining source of lead in the drinking water and it is thought that levels of 10 ug/l are probably achievable. Remaining sources would be lead service line sections from meter to house, lead pigtails (pigtails should, however, be removed when the service line is replaced), faucets, and lead solders in household plumbing.

- Part of the problem with the 10 ug/l level is that only that portion of the lead pipe owned by the water system will be required to be replaced, which is roughly half the pipe. The contribution of lead from that remaining portion of the pipe is not well documented.

Table 2
Annual Benefits of Corrosion Control

	Reduced Numbers at Risk	Monetized Benefits
Children	1.10 million	$110-300 million
Adult Males	130,000	$290 million
Materials Benefits		$530 million
TOTAL Benefits	1.2 million	$930-1,120 million
Estimated Costs		$780 million
Net Benefit		$150-340 million

Option 1 vs Option 2

As noted above, criteria from which to determine BAT include technical feasibility, costs, and benefits:

- Corrosion control and lead pipe replacement are both technically feasible, as well as affordable on a household basis.

- Total national capital costs are: $1.8 billion for corrosion control and an additional $2.6 billion if all lead pipes are replaced. Replacement of 50% is more likely, at cost of $1.3 billion. (Table 2 summarizes these costs).

The question of benefits is much more difficult to address: Is pipe replacement worth it?

- Corrosion control is more cost-effective. The reductions in lead levels achievable with corrosion control are much higher than the relative gains with pipe replacement at similar capital costs. However, from a rough calculation, the benefits of achieving 10 ug/l could be as high as 3 times the benefits of achieving 20 ug/l.

- Pipe replacement costs would accelerate costs that will be expended over the next 50 years.

- Corrosion control can achieve levels of 20 ug/l and less whereas levels of 10 ug/l may be feasible with replacement of the PWS portion of lead service lines in many cases.

The degree of public health protection provided by each option is important in setting the standard. The data currently available indicate that at blood levels of 10 ug/dl for fetuses and 15 ug/dl for small children, risks of adverse effects are most likely to occur in individuals. Under the compliance scheme discussed, a system will be in compliance with the MCL when an estimated 95% of its taps meet the MCL level; 5% may be above the MCL. In addition, as a useful reference point, the OAR analysis of lead in air lead to the estimate that in order to get 99.5% of the population to below 15 ug/dl, the population average PbB would need to be reduced to 6 ug/dl. Current national average blood lead levels are about 8 ug/dl.

The contribution of drinking water to total blood lead under each of the options can be estimated. Several studies have estimated the correlation between lead intake and blood lead values. Based on a review of these, ODW has estimated a value of 0.2 for correlating drinking water lead and blood lead levels. This factor can be used to estimate the contribution of drinking water to blood lead for each of the MCL options.

At an MCL of 20 ug/l, most of the population will probably drink water containing an estimated 10-12 ug/l, because of several conservative assumptions included in the compliance monitoring schemes as discussed below. If water containing 10-12 ug/l is actually consumed, it would contribute approximately 2-2.4 ug/dl to the blood lead.

At an MCL of 10 ug/l, most of the population will probably consume water containing about 6-7 ug/l, as discussed below. At this intake level, drinking water would contribute about 1.2-1.4 ug/dl to blood lead.

In addition, lead levels in drinking water are distributed over a range of values. The general impact of either of the options would be to shift the distribution of water lead levels downward. The upper end levels as well as the middle levels will be reduced from the current level under either option. The issue for resolution here is whether the downward shift is enough from a public health perspective under the 20 ug/l option.

It should be noted that this analysis relies on average values. In reality, the values of the variables used in this discussion are distributions, and the analysis does not account for this fact. The analysis is intended only provide a comparison of the two MCL options. A more detailed analysis of the impact on blood lead levels of the MCL options which estimates the numbers of children at different blood leads as a result of drinking water and which attempts to account for the distributions of water lead and blood lead values is currently being prepared.

A key factor in this analysis is the assumption that at an MCL of 20 ug/l children drink water that has an average of 10 ug/l lead. This is considered more realistic than using the MCL level itself because of the following conservative features of the of the MCL compliance monitoring scheme:

1) the MCL is based on morning first draw water which represents the highest concentrations for lead levels in water;

2) because most water systems will either treat to below 20 ug/l if possible or have water naturally below 20 ug/l, and even if systems treat just to 20 ug/l, some taps will be below this value;

3) sampling during summer months, when lead levels are expected to be higher because the water is warmer, are a required part of the monitoring protocol;

4) These same conservative assumptions apply generally, but less so, to an MCL of 10 ug/l. Source water and

distribution main contributions to water lead are about 1-5 ug/l, and so are more significant at 10 ug/l; actual levels will therefore be only slightly lower than 10 ug/l.

On the other hand, the compliance monitoring protocol is not comprised completely of conservative or worst case estimates. For example, one approach under discussion would allow up to 5% of taps to be above the MCL when the system is in compliance; some children therefore may be exposed to greater than 20 ug/l.

Overall, the conservative assumptions in the compliance monitoring scheme mean that the distribution of lead levels in drinking water would shift downward with an MCL of 20 ug/l, and the drinkling water contribution to blood lead levels reduced to about 2-2.4 ug/dl. An MCL of 10 ug/l would clearly provide a greater shift downward in water lead levels, resulting in a lower drinking water contribution to blood lead (of about 1.2-1.4 ug/dl), and therefore greater assurance that children are below 15 ug/dl.

Advantages of Option 1: Corrosion Control

1. Corrosion control can achieve levels around 20 ug/l or less of lead in almost all cases.

2. Corrosion control is more cost effective than corrosion control plus pipe replacement.

3. EPA can assess the compliance monitoring data and reevaluate the need for pipe replacement in a few years.

Disadvantages of Option 1

1. If corrosion control is BAT, it may be difficult to sustain the argument that pipe replacement is not feasible because household costs are reasonable. The basis would be that national costs are not feasible.

2. Lead pipes would still contribute some lead to drinking water, even with non-corrosive water.

Advantages of Option 2: Corrosion Control Plus Lead Pipe Replacement

1. One of the major sources of lead is at least partially removed from use and the lowest possible lead levels, near 10 ug/l, will be achieved. This option provides a greater degree of health protection, especially to communities with a substantial portion of lead service lines.

2. The benefits could be up to three times that of option 1.

Disadvantages of Option 2

1. Total national costs are high.

Recommendation: Set the enforceable standard based upon corrosion control and partial lead service line replacement as BAT.

Rationale for Recommendation

Corrosion control plus lead service line replacement is the preferred option because it is technologically feasible, if economically acceptable, results in an MCL closer to the recommended MCLG than corrosion control alone, as required by the SDWA, and the benefits could be up to three times as much as with corrosion control alone.

The MCL achievable with this option, 10 ug/l, provides more public health protection than corrosion control alone, and provides greater assurance that children will not suffer adverse health effects as a result of water consumption. The cost of providing a greater margin of safety appears to be warranted because of the low level effects of lead. It is difficult to identify PbB levels that would clearly constitute a threshold level, below which there are no or only minimal risks of adverse health effects. Although blood lead levels at which risks of adverse health effects in young children may have been identified, the possibility of effects (biochemical changes at the cellular level) extending to lower levels cannot be dismissed (whether these effects represent medically significant or adverse effects is highly uncertain at present). Therefore, setting an MCL at the lowest feasible level is warranted.

Communities having a substantial number or fraction of lead service lines (approximately 16,000 or 26% of systems have some), will, when BAT is implemented, have nearly the same level of public health protection from lead in their drinking water as communities that never had lead services.

Corrosion control and pipe replacement would be initiated simultaneously, although pipe replacement would require a number of years to fully implement. In the interim:

- Systems exceeding the MCL would be required to provide public notice to their customers. The public notice will advise the public to flush their plumbing before consuming the water.
- If after BAT is installed and the system still does not achieve the MCL, the system will likely apply for a variance:
  - if lead levels are less than the URTH level but above the MCL, targetted public education programs would be required and a variance would be issued.
  - if lead levels are greater than the URTH level, water suppliers would be required to offer bottled water and conduct targetted public education, as part of the conditions for receiving a variance.

BEST COPY AVAILABLE

Mr. **Dannemeyer**. If I may, Mr. Chairman, I would like to ask Mr. Prenney a question about the Massachusetts program.

Mr. **Waxman**. They don't have a drinking water program. Let me just finish the drinking water part, and then I'll yield to you for whatever questions you want.

I don't want to go into more detail on this treatment technique requirement, but to simply say, I don't think that EPA has the legal authority to have that kind of a regulation in place if its contrary to the law. I also think that EPA has chosen to abandon the lead maximum contaminant level and a strong Federal corrosion control program, and replace it with an extremely weak decentralized effort which doesn't even appear to be federally enforceable.

So in other words, you're going to turn it over to the States to have some kind of corrosion control technology. You're not going to know whether it's going to work. The States are going to rely on the water systems, and we're back to where we were. It's the polluter deciding how much to pollute and not the Federal Government making sure that the public health is protected by a standard that sets out the safe level.

I'm exasperated with EPA's disgraceful performance on this issue. EPA is setting a treatment technique that leaves it up to the water suppliers themselves to decide what to do, turns the entire issue over to the States, again I think in violation of the law.

Ms. Fisher and Mr. Elder, lead in drinking water is an extremely pervasive problem, which has a serious impact on the mental development of children, not just a few children, but more than a million.

In 1988, we came very close in this subcommittee to legislatively setting a drinking water standard for lead. We pulled back when your predecessors, as witnesses before us, told us you were going to deal with it. You were going to have a standard out. We didn't have to act, because EPA held this in such high priority that we could expect action at any time, and we accepted that in 1988. We're not going to accept that in 1991.

It is my intention to work with my colleagues on this subcommittee to fashion legislation that will mandate an effective EPA response to the lead in drinking water problem. I think we've waited long enough.

I thank Mr. Dannemeyer for his patience, allowing me this time, and I yield to him for whatever time he wants to——

Mr. **Dannemeyer**. A strong letter to follow; is that right, Mr. Chairman?

Mr. **Waxman**. Well, strong legislation to follow.

Mr. **Dannemeyer**. Mr. Prenney, I'd like just to ask you for a moment about what you're doing there in Massachusetts, because I think the public in America is concerned about the presence of lead paint on walls in older houses. When a tenant moves into that kind of a residence, what should the tenant do? Sand it all off? And if you sand it all off, how long does it remain around in the atmosphere and dust and so on? What's your response to that?

Mr. **Prenney**. Well, Mr. Dannemeyer, in Massachusetts, it's the property owner's responsibility to take care of any lead paint hazards in the home.

Mr. **Dannemeyer**. How do they go about that? Do they have to sand it all off?

Mr. **Prenney**. Well, no. We have very specific regulations that limit the types of ways you can deal with lead paint.

Mr. **Dannemeyer**. Well, supposing that, you know——

Mr. **Prenney**. What we're finding these days is, many of the contractors are moving away from the traditional methods of doing deleading or lead paint abatement.

Mr. **Dannemeyer**. How do they get it off.

Mr. **Prenney**. Sanding and—usually they either replace the surface, pull out a window and put in a new window. They can cover the surface, put new wallboard over a wall that's loose chipping and peeling, or they can remove it.

Mr. **Dannemeyer**. Does it work to take a sander and sand all the paint off?

Mr. **Prenney**. No. The problem with the sander is that you create a lot of dust and chips, and it's very difficult to clean up, and unless you have a special type of vacuum that is attached to that sander, it can be a very hazardous method of doing it.

So we prohibit the use of power tools unless they have Hepper vacuum systems attached to them.

Mr. **Dannemeyer**. So I take it the preferred method is just put another surface on which the surface is that contains the leaded paint; is that it?

Mr. **Prenney**. Well, there are basically three methods of abating a lead-painted surface. You can either cover it, such as with paneling or wallboard on wall. You can remove it; you can scrape the paint off. That's' still allowed, but it's obviously one of the more dangerous and hazardous methods of doing it, or you can replace the surface. You can, for example, pull out a window, and you can replace that window.

And there may be a fourth method, and that is covering the surface with a coating that is durable and that would protect the surface and any children from exposure to the underlying lead paint.

And the two issues that you usually deal with when you're dealing with lead paint in housing is the cost issue and the safety issue, and I think we're seeing more and more in Massachusetts contractors and property owners moving away from the sort of traditional hazards of deleading to methods that are just much more safer and cost effective.

Mr. **Dannemeyer**. Thank you.

Mr. **Houk**. Mr. Dannemeyer, when a house is sold in virtually all of this country, the mortgage holder has to receive a termite bond, and that's for the protection of the financial institution.

There are two issues, lead-based paint and radon, in our homes that is for the protection of the family living in the homes.

I also think that maybe too much is being made of the cost of lead abatement, because with 40 million homes just with lead on the inside, this is a very labor-intensive field. It is my view that there is going to be a real industry, such as Massachusetts has already developed around Boston, with employment opportunities to do the deleading in this country. It need not all be done with governmental dollars dropped off at the doorstep; and it may end up to be relatively revenue neutral.

Mr. Dannemeyer. Well, I think what you're suggesting is that a requirement be in existence that when a piece of real property, residential, changes hands that we supplement the existing requirement by a lender for a termite report, that the house has been deleaded; is that what you're saying?

Mr. Houk. Yes. And on the radon issue, it's already being required in many counties and municipalities that control that.

But my advice to anybody who is moving into an old house is that the first thing you do before you move in, if you have children or anticipate your wife getting pregnant, is that you'd better have the house inspected to make sure there is no lead, and if there is, abate the lead out of that house before you move in.

Mr. Dannemeyer. Thank you, Mr. Chairman.

Mr. Waxman. I noticed that Mr. Victor Kimm of EPA just went over to whisper in your ear, and as I recall, Mr. Kimm was head of the drinking water program.

I'd like him to come forward and take a seat.

Mr. Kimm, you were the head of the EPA efforts, weren't you?

Mr. Kimm. Yes, sir. I testified. Yes, sir. I headed the drinking water program from 1975 when it started until 1985.

Mr. Waxman. Until 1985. So you weren't here in 1988 testifying——

Mr. Kimm. No, I wasn't.

Mr. Waxman [continuing]. That that regulation was going to be right there in place.

Mr. Kimm. If you would bear with me, maybe I can make what the Agency is doing a little bit more——

Mr. Waxman. No. You know what—we're going to have a hearing on drinking water. We're going to have Mr. Reilly here. He's the head of the Environmental Protection Agency. You are no longer in drinking water. Different people switch around, different jobs, and when EPA's supposed to do things, they don't do it. We have a law; it's not enforced.

Medicaid is supposed to do things; they don't do it.

I think we've got to go to the top. I think we've got to have the Administrator of the Environmental Protection Agency come here before this subcommittee that has jurisdiction over his laws that he's enforcing, and I want to know whether he's enforcing these laws and why, if they are not, they've taken so long and why they're ignoring something as serious as lead in drinking water that threatens the health of so many children.

So I'm going to leave that issue until that time.

I do want to ask just two very quick questions.

Dr. Houk, the funds available for 1991 were about $8 million for your program. Did you get more applications for funds than you could fund?

Mr. Houk. We have 27 approved applications. We will be able to fund at most six.

Mr. Waxman. And does the strategic plan make recommendations for the program's funding level?

Mr. Houk. Yes. In years 1 through 3, $25 million is proposed for the screening program and then up to $45 million in the 5th year. And then after that, we believe it would level off and start decreasing.

Mr. **Waxman**. Now some people have said that lead abatement programs in housing are too expensive to be afforded. Do you have any comments about the relative cost benefits of lead abatement?

Mr. **Houk**. Yes. In the strategic plan, there is an example that shows that also statement, "Too expensive to do", falls into blaming the child for lead poisoning. I would like to submit, I think, a very eloquent statement that Dr. Mason, the Assistant Secretary for Health, made in the Senate. His statement points out that we are going to pay the cost, no matter whether we do it by the houses or dealing with the criminal activity of lead, the decreased learning ability, the behavior that gets into all the AIDS activities, et cetera. Those costs are going to come due. And we had better recognize that when we're making a decision about that it's too expensive to do.

[The information referred to follows:]

Excerpt From Remarks of Dr. James O. Mason, Assistant Secretary for Health, Department of Health and Human Services

Dr. Mason: May I just speak for children for just a moment? We have an estimated 250,000 children in our country that have blood lead levels that are in excess of 25 micrograms per deciliter. Society is going to pay a horrendous cost, and I am not just talking about the cost of a person not reaching their full potential, and I can't even put a price tag on that.

But the cost of remedial education, the cost of a high school dropout who is more inclined to become addicted to drugs, to get involved with a culture that leads to AIDS and other problems of society, that cost can be measured in dollars and cents, and it is greater than the cost of abatement, or remedial action. I simply want to say that that is why our strategic plan aims the target at highest priority—those children that through screening are shown to have blood lead levels above 25 micrograms, we wither have to get them out of those homes, or we have to abate the homes.

I totally support the work of EPA and HUD to find more cost-effective ways to do that. But I simply wanted to express that there are costs we are going to have to entail as a society, and many of those will fall on the Federal Government if we don't do it.

So I hope that we can cooperate with our other agencies here in moving that process along. But let's target our efforts to those homes where we know children are being poisoned, rather than just doing it across the board. Let's get at those homes where we know lead is doing a disservice to our Nation's future.

Mr. **Waxman**. Well, I want to thank all of you for being here and participating in this hearing, and obviously I think there's a lot more to do, and I'm very frustrated and exasperated that some of the things that we've required by law to be done are, in fact, even being done at all, or laws that we've passed, I don't see them being enforced in other areas.

It seems to me we need stronger Federal regulations, maybe legislation.

I appreciate your all being here.

We have two additional panels to hear from at this hearing, but I'm going to break now and have us return at 1:45. We will meet again back in this room and complete the hearing.

[Whereupon, at 12:35 p.m., the hearing was recessed, to reconvene at 1:45 p.m. this same day.]

AFTER RECESS

Mr. **Waxman**. The subcommittee will come back to order.

I would like to now call forward the following individuals to testify together as a panel: Ellen K. Silbergeld, University of Maryland, Toxicology Program; Vicki Rafel, National Parent Teachers Association; Joel Packer, legislative specialist, National Education Association; Don Ryan, executive director, Alliance to End Childhood Lead Poisoning.

We are pleased to welcome you to our hearing today. Your prepared statements will be in the record in full. We would like to ask of you, however, to limit the oral presentation to no more than 5 minutes.

Dr. Silbergeld, why don't we start with you?

STATEMENTS OF ELLEN K. SILBERGELD, UNIVERSITY OF MARYLAND AT BALTIMORE, TOXICOLOGY PROGRAM; VICKI RAFEL, VOLUNTEER, NATIONAL PARENT-TEACHERS ASSOCIATION; JOEL PACKER, LEGISLATIVE SPECIALIST, NATIONAL EDUCATION ASSOCIATION; AND DON RYAN, EXECUTIVE DIRECTOR, ALLIANCE TO END CHILDHOOD LEAD POISONING

Ms. SILBERGELD. Thank you very much, Congressman, and I am pleased to be part of what I think will be a very important inquiry into some of the reasons why lead poisoning continues to be the major public health crisis, as Dr. Rosen referred to it, that it is today.

I want to speak to the issue that was really raised by Congressman Dannemeyer, in which he asked whether policy was running ahead of science or whether we really had the sound science on which to base public policy in this matter.

In fact, in this area, dealing with lead in the environment, it has been the case for at least the past 20 years that public policy has lagged severely behind science. We have seen a gradual and reluctant of regulatory and even public health authorities to this ubiquitous and dangerous problem in the occupational and general environment, and even at present, public policies, health policies, prevention strategies, and regulations lag seriously behind what we know about the toxic effects of lead.

While we understand that children are at special risk for lead exposure owing to their particularly intensive interactions with the environment, particularly the indoor environment, and children are at special risk for lead toxicity because of the susceptibility of the developing brain during the late prenatal and early postnatal periods, I would like to focus on two relatively neglected human targets for lead toxicity, men and women of reproductive age. These groups are at significant risk of toxicity from the levels of lead now present in the environment, particularly in drinking water and food.

Now while recent studies in the United States and Australia have found that low levels of exposure of pregnant women can increase the risks of miscarriage, most attention has been given to findings that even lower levels of exposure of the fetus are associated with decreased intrauterine growth and compromised neurologic development during early childhood. These effects, we should note, have been found in children whose mothers had blood levels during pregnancy as low as 8 to 12 micrograms per deciliter.

The sources of exposure for the fetus are entirely from the mother. Lead freely crosses the placenta and is taken up by the fetus over gestation, incorporated into its bone, brain, and other tissues.

Most of the lead exposure, however, to the fetus comes not from the mother's encounters with lead in her external environment during pregnancy, but rather from the mobilization of stores of lead that she has absorbed and retained for years prior to pregnancy. This phenomenon makes lead literally transmissible from mother to child.

We don't yet fully understand the magnitude of this route of exposure from the mother's stores to her fetus, but very recent data suggests that it may be the major source of fetal lead exposure in most cases. This is due to the fact that, except for conditions of very high external lead exposure, much more lead is found in the mother's bones from her lifetime of exposure as compared to the amount she is likely to absorb during the 9 months of her pregnancy.

I think with particular concern of those children Dr. Graef described and the children Dr. Rosen deals with, who had blood lead levels in excess of 60 micograms 15 or 20 years ago, who are now entering their reproductive periods and will be at risk for this particularly insidious form of lead poisoning.

I believe, in fact, Mr. Waxman, that as a consequence of unregulated dispersive uses of lead in the United States, we have a population of children that may represent the third generation of lead poisoning. That is, their grandmothers were exposed to increasing amounts of lead in urban air, indoor and outdoor, as lead was added profligately to gasoline. Their grandmothers transferred that lead that they absorbed to their mothers, and their mothers then transferred their lead to them. All the while, the environments of mothers and children have been growing more and more contaminated, as lead particulates deposited in dusts and soils and the painted surfaces of housing gradually exfoliated and deteriorated.

No one has yet estimated the potential impacts of fetal exposure from the mobilization of stored lead, nor do we understand the potentiation of this problem by coincident undernutrition in early pregnancy.

I would like to emphasize that we have no way at present to treat or prevent fetal lead toxicity.

Mobilization of bone mineral, including lead, also occurs during aging, often so severely in many women after menopause that the integrity of their bones and the risks and hazards of minor falls are greatly at risk. We have found that this period of rapid physiologic change after the menopause also results in the release of lead from bone.

The implications of this redistribution from bone to blood is analogous to placing older women in a lead factory. Lead is neurotoxic to adults, and it is possible that this relatively rapid change in blood lead might play a role in some of the cognitive dysfunctions of aging.

I would also like to note recent concerns about the effects of lead on the male parent. Concerns over the maternal and fetal effects lead have been misused by some to exclude fertile women from jobs, and recent data from our laboratory and elsewhere indicate that, in addition to the concerns for civil rights, there are very serious scientific limitations to this policy, and that, in fact, the male parent, who contributes half the genetic inheritance to his children, may be a vector of transmission of lead's damage to the next generation equally with pregnant women.

Now based on these new findings; I would suggest that Congress must extend its concern to preventing exposures to lead of children and their parents. And it is important to reiterate that all forms of lead are toxic. The molecular form of lead, whether it is a sulfide, halide, oxide, or an organo compound, may in the short term affect absorption, but contrary to the continuing claims of various segments of the lead industry, these differences are relatively insignificant over the long term that is relevant to chronic exposures and intoxication.

Mr. WAXMAN. Dr. Silbergeld, I'm going to have to interrupt you. The rest of that statement is going to be in the record.

Thank you for your presentation.

[Testimony resumes on p. 156.]

[The prepared statement of Ms. Silbergeld follows. Attachments referred to may be found in subcommittee files.]

TESTIMONY OF ELLEN K. SILBERGELD, PH.D.

before the Health and Environment Subcommittee

U.S. House of Representatives

April 25, 1991

"Impacts of Lead Exposure in the Indoor Environment"

I am pleased to respond to your invitation to present testimony before this distinguished Subcommittee on the impacts of lead exposure in the indoor environment. My scientific career, at Johns Hopkins, the National Institutes of Health, the Environmental Defense Fund, and presently at the University of Maryland Medical School, has been largely focussed upon improving our understanding of the nature and mechanisms of lead poisoning. I have also served on several EPA advisory committees related to lead, including the Clean Air Science Advisory Panel, the expert peer review panel for the Ambient Air Quality Criteria Document for Lead, and a special Science Advisory Board panel on the carcinogenicity of lead. I have also been a peer reviewer of documents on lead prepared by the Agency for Toxic Substances and Disease Registry. I am a visiting professor of toxicology at the University of Maryland and an adjunct professor of pharmacology and experimental therapeutics at the Medical School in Baltimore. At present, my research concerns the molecular mechanisms of lead toxicity; I am also engaged in a research project designed to determine the nature and extent, and the policy implications, of exposures of young mothers and their infants to lead.

In this testimony, I will present a brief summary of our present knowledge of lead toxicity, particularly the most recent developments in that knowledge, and the implications of that knowledge on evaluating and controlling sources of lead in the American environment. Finally, I shall suggest opportunities for Congress to establish effective programs of preventing lead poisoning.

Lead poisoning is the single most significant disease of environmental origin the United States.

In its landmark report to Congress in 1988, the Agency for Toxic Substances and Disease Registry (ATSDR) documented the epidemic prevalence of lead exposures in children and adults in the US. Millions of children, including fetuses, and thousands of pregnant women and other adults are exposed to lead from food, water, products, and environmental sources at levels associated with demonstrable toxicity. Most attention has been paid, rightly, to the hazards of lead for young children. This attention springs from two concerns: first, that children are at special risk for lead **exposure**, owing to their particularly intensive interactions with the environment, especially the indoor environment, and second, that children are at special risk for lead **toxicity**, owing to the particular susceptibility of the developing brain during the late prenatal and early postnatal periods. Research by my colleagues at this hearing, namely John Rosen, Herbert Needleman, and Paul Mushak, has described the nature of the risks and the pervasiveness of the exposures of American children to lead.

In this testimony, I shall focus on two relatively neglected human targets for lead toxicity, men and women of reproductive age. I shall draw upon recent data from our laboratory and other sources to indicate that these groups are at significant risk of toxicity from the levels of lead now present in the environment and food.

1. risks of lead to pregnant women

Lead at high dose has long been recognized to present hazards to pregnant women and their unborn children. Studies from the last century reported increased risks of miscarriage, stillbirth, and difficulties in childbirth among women exposed to high levels of lead. More recent studies in the US and Australia have found that lower levels of exposure of pregnant women can increase the risks of miscarriage. Considerable attention has been given to findings that relatively low levels of exposure of the fetus, measured by monitoring lead in maternal blood and at delivery, are associated with decreased intrauterine growth in stature and compromised neurological development during early childhood. These effects have been found in children whose mothers had blood lead levels as low as 8-12 mcg/dl.

The sources of lead for the fetus are entirely from the mother. Lead freely crosses the placenta and is taken up by the fetus over gestation, incorporated into bone, brain, and other tissues. But the lead exposure of the fetus does not only come from the lead that is absorbed by the mother during her pregnancy. If that were the case, then reducing exposures of women during

BEST COPY AVAILABLE

pregnancy might be the critical strategy for preventing toxicity in young children due to prenatal exposures. In many cases, most of the lead exposure of the fetus comes not from the mother's encounters with lead in the external environment during pregnancy, but rather from the stores of lead absorbed and retained by the mother for years prior to her pregnancy. This phenomenon makes lead literally transmissible from mother to child.

To understand this phenomenon, we must consider two important facts. First, lead in many ways is handled by the body in a manner similar to that for the essential trace element calcium. Second, the uptake and storage of lead in certain parts of the body is very long, with a half-life in excess of 30 years. Lead, like calcium, is primarily taken up and stored by bone. Because lead remains bound to bone cells for a long period of time, over time the levels of lead in bone stores increase.

This process of compartmentation of lead in bone was until recently considered a process of detoxification, if you will, whereby lead was sequestered in a bound form away from such critical target organs as kidney or brain. However, this assumption neglected the fact that bone is a dynamic tissue, and some changes in human physiology can dramatically alter the balance of calcium -- and lead -- going into and coming out of bone. One of these changes is pregnancy; another is ageing.

During pregnancy, as detailed in the attached paper, the physiological and hormonal changes that occur result in a relative efflux, or release, of calcium and lead from bone back into blood.

This release is particularly great in many women during the last trimester of pregnancy, and is probably driven by the fetal requirement for calcium to support its own bone growth. Unfortunately, the same hormonal signals that govern the fluxes of calcium from bone during pregnancy also release lead from bone, resulting in significant redistributions of the mother's lead burden from bone to her blood and thence to her fetus. A similar set of events may occur during breastfeeding, when large amounts of calcium are needed to support production of breastmilk. Lead is secreted in breastmilk, and surveys have found higher levels of lead in milk from mothers living in urban as compared to rural areas.

We do not yet fully understand the magnitude of this route of exposure, from the mother's bone stores to the fetus, but very recent data suggest that it may be the major source of fetal lead exposure in most cases. This is due to the fact that except for conditions of very high external lead exposure, much more lead is found in the mother's bones from a lifetime of exposure as compared to the amount she is likely to absorb during the nine months of her pregnancy.

What is particularly alarming about these findings, described in detail in the attached reprint, is the likelihood that the mobilization and transfer of maternal bone lead to the fetus may be exacerbated by conditions such as undernutrition during pregnancy and young age. We suspect that the population at highest risk for high bone lead stores is also the population at high risk for undernutrition (particularly of dietary calcium) during pregnancy and also at risk for becoming pregnant before the age of 20.

The long history of unregulated dispersive uses of lead in the US -- specifically, the addition of lead to gasoline and the deliberate use of lead in paint -- has resulted in a population of children that may well represent the third generation of lead poisoning. That is, their grandmothers were exposed to increasing amounts of lead in urban air -- indoor and outdoor -- as lead was added to gasoline from 1925 until the present; their grandmothers transferred the lead that they had absorbed to their mothers, and their mothers then transferred their lead to them. All the while, the environments of mothers and children were growing more and more contaminated, as lead particulates deposited in dusts and soils and the painted surfaces of housing gradually exfoliated and deteriorated.

We do not know how pervasive the problem of intrauterine lead exposure may be in the US. ATSDR estimated nearly 500,000 fetuses are exposed to excess lead solely from the exposures of their mothers during pregnancy. No one has yet estimated the potential impacts of fetal exposures from the mobilization of stored lead, and the potentiation of this problem by coincident undernutrition and early pregnancy. We have no way to treat or prevent fetal lead exposure; the available chelating agents, including the most recently approved drug DMSA, are not demonstrably safe in pregnancy.

Mobilization of bone mineral also occurs during ageing, often so severely in a substantial percentage of postmenopausal women as to jeopardize the integrity of bone and increase the hazards of minor falls. We have found that this period of rapid physiological change also results in the release of lead from bone. In postmenopausal women, blood lead levels are significantly increased as compared to premenopausal women. The implications of this redistribution -- which is analogous to placing older women in a substantially more lead-contaminated environment -- are unknown. Lead is neurotoxic to adults, and it is possible that this relatively rapid change in blood lead might play a role in some of the cognitive dysfunctions of ageing.

2. Effects of lead on the male parent

Concerns over the maternal and fetal effects of lead have been misused by some to justify exclusion of fertile women from jobs where lead exposure can occur (c.f., Johnson Controls). However unacceptable these policies may be in terms of civil rights and equal opportunity, they are also objectionable for scientific reasons. So called fetal protection policies neglect to consider that human reproduction is bisexual, and that the health of the father and his germ cell is of equal importance to the successful development of the embryo and fetus. Although the father's role in reproduction may be physiologically limited in time, it is genetically of equal importance to the role of the mother. Half of each embryo's chromosomes are derived from the father. For some reason, this biological fact has escaped the attention of regulators and, unfortunately, much of toxicology.

Early studies of high-level occupational exposures found that in men lead reduces fertility. At slightly lower exposures, lead has been associated with reduced sperm number and motility and increased frequency of abnormal shape. We have recently found that the toxic effects of lead on male reproduction may occur at much lower levels of exposure, possibly within the range that effects on fetal and maternal status have been reported. In a rodent model of chronic low level lead poisoning, we have found that fertility is reduced when blood lead levels rise above 25 mcg/dl. Of possibly greater significance, at blood lead levels as low as 15-20 mcg/dl, exposed male rats produce offspring with substantially altered brain development, in the absence of maternal or direct fetal exposure. These male-mediated effects on fetal brain development are independent of and qualitatively different from those produced by intrauterine exposure.

What the consequences of these effects are, and how lead exposure of the father confers damage expressed in the fetus, we do not know. The results raise concerns that the toxic effects of lead in young children may be as much due to exposure of their fathers prior to procreation as it is to the exposure of their mothers during or prior to pregnancy.

3. Sources of Lead in the Environment

Based upon these new findings, concern must be extended to preventing exposures to lead of children and their parents. The hazards of lead are not limited by age. It is therefore important to consider what environmental sources pose the greatest risks to adults.

Lead poisoning is poorly treatable; the only way to prevent lead poisoning is to prevent exposure. Prevention of exposure requires two strategies: comprehensive and effective screening of all persons at risk in order to detect exposure early in its course, and efficient identification of sources of lead before exposure occurs. Both strategies are necessary in the case of a disease of such prevalence.

The sources of lead are anthropogenic, that is, they are of our own creation. Although lead is a natural element, not a synthetic chemical, as a the result of centuries of exploitation from mining through waste disposal we have radically altered the amount of lead that is bioaccessible to human populations. It is important to reiterate that it is lead *as lead* that lead is toxic; the molecular form of lead --- as a sulfide, halide, oxide, or organocompound --- may affect absorption in the short term, but contrary to the continuing claims of various segments of the lead industry (depending upon which one is under scrutiny), these differences are relatively insignificant over the long term that is relevant to chronic exposure and intoxication. That is, it does not empirically matter if it takes two months or four months for a child's brain to be irreversibly damaged by lead, depending upon whether the lead is presented as a carbonate or an oxide, unless we can be sure to identify that child and intervene within this period of time. Since less than 5% of all children under 6 years are ever tested for lead exposure in the US, this difference is meaningless in a public health sense.

To prevent lead poisoning it is essential to understand that all lead exposures are cumulative. The critical determinant of toxicity in an individual or in populations is the total amount of exposure to lead from all sources. Effective prevention cannot therefore be based upon a source-by-source, or product-by-product assessment of risk, as is the general practice at EPA. Each source contributes to the total burden of exposure, and it is this total burden that is unacceptable in terms of the distribution of exposures and toxicity in the US population, as documented by ATSDR. As a corollary, acting to reduce one source has a measurable impact on overall exposures, as the experience of reducing lead levels in gasoline from 1976 to 1982 demonstrates.

Many of the most intensive sources of lead exposure are found in the indoor environment, within our homes. These sources arise from the residues of past uses of lead, now largely (although none completely) regulated, as well as from ongoing uses of lead. The most significant are: household dusts, drinking water, food, consumer products, and ambient air. The order of listing roughly corresponds to the potential intensity of exposure for individuals at risk; for the US population, the prevalence of these sources is roughly inverse (see ATSDR).

For these immediate or proximate sources, it is important to identify the ultimate sources in order to develop efficient methods of control. That is, it makes no sense to sweep up lead-containing dusts without finding and removing the source of lead for household dust. The source of lead in dusts is paint; the source of lead in drinking water is plumbing materials; the sources of lead in food are can solders, pesticides, contaminated soils, and continuing emission sources. It is in the indoor environment that these sources combine to present large and ongoing risks of exposure. Some of these sources have been partly controlled by banning products or uses of products. Some of these sources nevertheless remain, despite ex post facto regulation. Since the hazards of lead never diminish -- as an element, lead has no half-life -- then ultimately the past uses of lead result in releases of lead into the human environment. Painted surfaces decay; plumbing corrodes; solder leaches.

For young children, paint and the related proximate sources of dust and soil are the most serious sources of lead exposure; lead based paint accounts for most cases of severe intoxication in children under 6 years of age. Much is needed to deal with this problem, and other witnesses at this hearing will address this issue in detail. In this testimony, I would like to discuss the sources that may of greatest concern to preventing lead exposure in adults, given the new data on health risks of low level lead exposure. Adults do not engage in much hand to mouth activity, or oral exploration of the indoor environment. Adults living in housing with dangerously deteriorated lead painted surfaces are at risk for lead exposure, although less intensively (in most cases) than young children in the same setting. For adults, in general, the most significant sources of lead exposure are likely to be lead in drinking water, lead in food, lead in ambient air, and lead exposures at the workplace. Thus, the unregulated or incompletely regulated ongoing sources of lead in the environment may be of particularly important to adult exposures.

4. Regulatory Actions and Other Steps to Reduce Lead Poisoning

The Public Health Service has adopted the elimination of lead poisoning as one of its top priorities in environmental health for the next decade. We can only hope that this goal will be more quickly achieved than it has been in the past, and that strategies will be developed that are truly preventive, designed to interdict exposure before it occurs, rather than detecting poisoning after the fact. At present, there are no lead prevention programs in the US that are truly preventive. As chair of the Maryland State Advisory Council on Lead Poisoning, I must admit that our state, long a leader in recognizing lead as a public health problem, has not developed a program that can be considered real primary prevention. Our current strategies are analogous to dealing with malaria by treating cases rather than controlling the vector of disease.

Progress towards eliminating lead poisoning can be achieved by several types of actions, reducing ongoing inputs of lead into the environment, increasing the pace of abating existing sources, and enabling more comprehensive and effective screening programs. These are outlined below.

a. update environmental standards and criteria - Health-based standards should be promulgated by EPA, FDA, OSHA, and CPSC to ensure that controls on lead exposure ensure the reduction of lead in air, water, the workplace, and consumer products. To achieve this, Congress should compel EPA to issue long-overdue general standards for lead in ambient air, drinking water, and soils and dusts. EPA has been laboring on these standards for almost ten years, in the case of ambient air, although under the distinguished leadership of Dr Lester Grant, of EPA's Office of Research and Development, the Agency has had a comprehensive criteria document to support a new standard. This document, as updated by the Science Advisory Board in 1990, supports a revised NAAQS for lead no higher than 0.25 micrograms per cubic meter, or a six-fold reduction in the current NAAQS. EPA has argued that with the reduction (not elimination) of lead additives from gasoline that there is no further need for a national standard, and that many urban areas are now reporting average ambient air concentrations of 0.1 to 0.2 micrograms per cubic meter. Unfortunately, the removal of lead from gasoline has been followed by the growth of a new source, municipal solid waste incinerators, which are being permitted and operated under the existing NAAQS. MSW incinerators have the potential to become major new sources of lead emissions, and their citing in large urban areas, such as Brooklyn and Baltimore, could impact thousands of persons. Moreover, EPA should enforce ambient air standards, and stationary source permits consonant with these standards, on primary and secondary lead

BEST COPY AVAILABLE

smelters. These facilities, almost without exception, fail to meet current air standards for lead; other actions proposed in this Congress to increase the rate of battery recycling and lead recovery will increase the productivity of secondary smelters. Unless these sources are stringently regulated, a good thing -- increased lead recovery -- will result in a bad thing -- air pollution, occupational lead poisoning, and a burden of lead-contaminated wastes. I have observed one of these smelters, the former AMAX secondary smelter in Cartaret NJ; Dr Landrigan and I have documented the impacts of this source on lead levels in backyards on Staten Island. The facility itself, when operational, was a Dantean vision of hell; lead concentrations measured near it were at times ten times the existing NAAQS. Yet it operated freely for years, unregulated by EPA or the state of New Jersey.

Congress should compel EPA to set a health-based drinking water standard for lead, measurable at the tap. Lead in drinking water is one of the most pervasive sources of lead for Americans, and a particular threat in the indoor environment. The presence of lead in drinking water can also contaminate food processing and preparation. After years of deliberation, EPA appears to have been captured by local water systems and sanitary engineering. Instead of promulgating an enforceable standard, such as that recommended by its Environmental Health Committee of 5 ppb -- EPA is going to issue a pure technology standard, requiring only a low technology water treatment option with no recourse to further actions if lead levels remain unacceptably high. EPA will not require the replacement of lead pipes in distribution systems.

EPA's other suggestions for dealing with lead in drinking water would be laughable, except to Californians, one suspects. That is, in a much-vaunted education program, EPA has recommended that consumers let their water run for 5-10 min each morning to flush out water that has leached lead overnight. The impact of such blatant wastage on water supplies in many parts of the country are staggering to contemplate.

Congress should compel EPA to set health-based soil and dust standards for lead. No such standards exist, although lead is a major problem at Superfund sites around the country and at many schoolyards and playgrounds in cities. EPA continues to assess lead hazards in soils and dusts by its outmoded leaching procedure, although it is well known that humans absorb lead directly in the solid phase, in particulate form, without the intervening step of leaching into water. This irrelevant approach results in unsafe decisions for cleaning up hazardous waste facilities and misleading guidance on methods of dealing with lead in urban dusts and soils, accumulated from deposition of lead from exterior paint and from atmospheric fallout. In a recent assessment of data on the associations between soil and dust lead, and absorption of lead by children, Pat Reagan and I recommended a soil lead standard of 100 ppm (reprint attached). This standard should also be used in developing appropriate criteria and methods for abating lead based paint inside homes, a task Congress has assigned to EPA along with HUD.

Congress should compel the Food and Drug Administration to set health based standards limiting the allowable concentrations of lead that can be leached from ceramics and crystal. Recent studies have reported that such sources can be quite significant, and in some cases sufficient to induce poisoning in adults and children. Rothenberg has reported that ceramics are a major source of lead in the diet of pregnant women in Mexico City. A leaching standard should be consistent with a health-based drinking water standard and should be applied to all vessels that may be used for the preparation, storage and serving of food, not just for selected items designated by some mysterious process by FDA.

b. ban certain hazardous uses of lead whenever possible at the level of production and sale, not consumption. Consumer-oriented rules for using lead-containing products are ineffective and in some cases counterproductive. Two examples can be cited. The reduction of lead in gasoline until 1983 was implemented by requiring the provision of lead-free gasoline without restricting the concentration of lead in leaded gasoline. Since overall lead use by refiners could be averaged over total production, as the amount of unleaded gasoline produced by a refiner increased, it was permissible to add more lead to leaded gasoline and still meet an overall average standard. This in fact happened. Moreover, since the regulation was enforced at the pump, as a requirement that certain cars could not be fuelled with leaded gasoline, as long as leaded gasoline was available at a lower price than unleaded, consumers bought and used leaded gasoline. The consequences were not only that the phaseout in lead emissions from cars was delayed, but also that this misfueling damaged air pollution control devices in cars causing increased emissions of PAHs and nitrous oxides. A second example is ongoing: in 1986, Congress required EPA to ban the use of lead in plumbing drinking water sources. EPA has not restricted the sale of lead solder or pipe fittings, but has instead implemented the SDWA amendments by requiring labelling and passing off to states the task of preventing misuse of products still on the market. This strategy does not work. Congress should examine opportunities for source reduction at the production level whenever possible to avoid these problems.

Congress should immediately ban the continued use of lead-based solders in canning. This extraordinarily hazardous use of lead has been reduced on a voluntary basis by much, but not all, of the canning industry. Recent surveys by Consumers Union and data we have analyzed from the FDA indicate that a significant portion of the American food supply (between 5 and 30%, as far as can be ascertained) may be processed into lead-containing cans (see attached reprint). Since most canners do not use lead solders, there is no reason that any canner should do so. This is a use restriction at a production level, and is thus enforceable.

Similarly, Congress should immediately suspend the registration of all lead-containing pesticides. This is also a marginal use, but one that is wholly unnecessary. The continuing use of lead arsenates can contribute to contamination of citrus juices.

In addition, Congress should ensure that these bans are extended to imported foods in order to ensure protection of the food supply.

Congress should ban production and importation of lead additives for gasoline. The continued sale of leaded gasoline is economically unnecessary; certain groups have been convinced that they need leaded gasoline, but technical studies by EPA and the Department of Defense, among others, demonstrate that almost all vehicles can run on unleaded gasoline or with relatively small adjustments can do so. The continued use of lead in gasoline -- even at the greatly reduced amounts mandated by EPA finally in 1985 -- continues to add lead to the environment and, as we have shown, may be a source of lead in our food supply.

Congress should ban the production of lead pigments for paints, printing inks, and colorants. These uses result in exposure of consumers and workers during use of these products and even more extensively during disposal of wastes. Lead pigments have been removed from many inks and all interior paints; thus they are clearly not necessary. Zinc-based paints can substitute for the exterior application of paint. Phaseout of lead-based paints for exterior purposes would prevent many cases of occupational lead poisoning, as documented in data collected in Maryland, New Jersey, and New York.

c. Congress should enable CDC to support universal screening.

An equally important component in preventing lead poisoning is the availability and utilization of early detection and screening. In its strategic plan to eliminate lead poisoning, the Public Health Service has stated that all children between 6 months and 6 years of age should be periodically tested for lead exposure. To accomplish this critical goal, Congress must provide sufficient funds to CDC and to the states to enable accessible and reliable screening programs to be developed and maintained. The provisions of the Lead Poisoning Prevention Act in this area should be extended and enlarged. In addition, CDC must be enabled to support laboratory services and QA/QC programs in the state to guarantee reliable testing and prompt reporting. As part of CDC's role, Congress should ensure that lead testing is reportable to state health departments.

d. Congress should oversee the progress of lead poisoning prevention programs.

In 1981, the Reagan Administration delisted lead poisoning as a reportable disease. Coupled with the defunding of local-based screening programs and CDC, this action resulted in a loss of surveillance and oversight that is critical to public health programs. We can never recover those lost years, except in the bits and pieces of those state programs, such as Maryland's, where the commitment to preventing lead poisoning was maintained. Congress, in addition to requiring that lead screening data be reported to CDC, should also mandate the regular assessment of prevention efforts on a national basis. ATSDR should be required to produce a biannual report on the nature and extent of lead poisoning in the US, updating its 1988 report to Congress. This first report emphasized children as the critical population; in future reports, ATSDR should assess risks to the entire population. EPA should be required to inventory the uses and production of lead, both primary and secondary, as well as increase its data collection on sources of lead releases under the Toxic Releases Inventory provisions of SARA. Any new use, or significant increases in current uses, of lead should be required to undergo an intensive analysis of its technical necessity and its potential to contribute to overall environmental contamination and eventual human exposure throughout its lifecycle, not solely during production and product use.

e. Research needs

While the research base is more than adequate to support the types of regulatory actions recommended above, there are critical research needs to develop sound policies of source identification, screening, health assessment, and prevention. These are outlined below:

I. source identification - improved methods for measuring lead in paint, dusts, soils
assessment of the sources of lead adults as well as children
improved test methods for lead in the wastestream
comprehensive risk assessment of lead in municipal solid waste

II. screening - improved methods for screening populations for lead exposure, including development of lowcost techniques for monitoring and surveillance

support for developing methods to assess lead exposures of pregnant women and mobilization of lead from bone during pregnancy and ageing (including the development and application of bone lead measurement technology)

III. health assessment - better information on the sources of lead exposure to the fetus;

research on the interactions of lead and nutrition;

effects of lead on the ageing

IV. prevention - improved methods for preventing exposure to lead-based paint;

methods for cleaning up lead-contaminated soils;

research on substitutes for lead in batteries and solders

Summary

Lead is an environmental and occupational toxin with no known safe level. It is the most prevalent childhood disease of environmental origin in the US, and a major public health problem in many countries around the world. New research indicates that in addition to young children, the fetus and both parents are at risk of intoxication from relatively low levels of exposure to lead.

Many sources, past and ongoing, contribute to lead exposures; many of these are found in the indoor environment. Opportunities for reducing exposure and eliminating lead poisoning include: updating environmental and product standards; restricting substitutable uses of lead insofar as possible at the level of production; ensuring access to reliable screening for all young children; improving methods of source identification, screening, health assessment, and prevention.

Years of inaction by federal agencies indicate a need for Congressional action and continued oversight. For nearly six years, EPA has been considering actions to reduce lead exposures. For over 8 years EPA has been involved in assessing new standards for lead in air. HUD has defaulted time and time again on Congressional and court-ordered mandates to establish and support feasible programs to abate lead paint hazards in the nation's housing. The Consumer Product Safety Commission could not find the will to act so Congress had to intervene to ensure removal of lead-containing water coolers from schools. OSHA has not fully enforced its outdated occupational standards for the lead industry. Clearly, Congress must act.

In addition to the actions suggested in this testimony, I strongly support the establishment of a dedicated fund to expedite the abatement of lead paint hazards in American housing through the imposition of a fee upon lead as it enters commerce. As the Environmental Defense Fund has proposed, such a fee can enlist market incentives to encourage product substitution and lead recycling. In addition, a dedicated fund will underwrite state and local programs in lead poisoning prevention, and support the critical research and technology transfer needed to eliminate this entirely preventable disease. If there is truly a momentum growing to act on this problem, the oldest recognized environmental disease, then there is a need to ensure that action is effective. To that end, I propose that Congress establish and fund a national center for lead poisoning prevention to develop the advances in source identification, screening, health assessment and prevention, drawing upon the experience of the public health community, biomedical research, engineering and abatement technology, and community knowledge of this enormous problem.

Mr. **Waxman**. Let's see, next we have Vicki Rafel.

STATEMENT OF VICKI RAFEL

Ms. **Rafel**. Good afternoon. My name is Vicki Rafel, and I'm here representing the National PTA. We thank you for the opportunity to testify.

I have been involved in PTA for 20 years at the local, county, State, and national levels, and in all those years, we've been hearing about lead, but we need to keep moving on with this issue.

We have a comprehensive written statement, and I'm just going to summarize some of that today.

The National PTA represents 6 million parents, teachers, students, and other child advocates all around the world. We are not a scientific organization, but we are convinced by the body of data that has been accumulated in this field, and we agree with the experts. Lead poisoning is the number one environmental hazard facing children in the United States, threatening them at home, at play, and in their schools.

We see a clear connection between environmental issues and education. If we are going to have the goal that by the year 2000 all children in America will start school ready to learn, we have to think about the effects of lead.

Goal No. 2 talks about increasing the high school graduation rate to at least 90 percent, and we have already heard today that lead has an impact on the children who are at risk of dropping out.

We know that lead is a problem and that children's exposure to lead in this country costs society billions of dollars in medical costs, special education, and decreased productivity and earnings due to impaired intellectual development.

Together, exposure to lead from paint, paint dust, water, and food poses a significant health threat to the children in America, and we must take action to address the problem.

The National PTA was a strong proponent of the Lead Contamination Control Act, but we are disappointed that the law has had such little effect in ameliorating the problem. The results of an EPA audit of this law published last year dramatically showed that this law did not work. States did not adequately ensure that school water sources were tested to protect children from lead contamination. EPA did not efficiently identify water coolers that are not lead free. States have not ensured that public water systems notify their customers of the dangers of lead in their drinking water or enforced the prohibition on use of lead pipes, solder, and flux in plumbing providing water for human consumption.

Not all of the schools that found lead contamination notified parents, teachers, and employee organizations of the availability of test results, as required by law, and EPA has not complied with the Safe Drinking Water Act requirement for revising the maximum contaminant level for lead in drinking water.

By not adequately enforcing the law, EPA is failing to protect the public health of the citizens of the United States. The Federal Government's delay in revising its maximum contaminant level for lead in drinking water illustrates this point.

Current law required EPA to lower the existing MCL for lead in drinking water by June 1988, yet the Agency has not done so. In fact, we understand that EPA officials have informed the subcommittee that they now plan to eliminate the current tap water standard entirely.

This is unbelievable considering that lead in drinking water is one of the top contributors of lead in the bloodstream of children and adults, and that over 40 million Americans have lead levels above what is considered safe.

We disagree with the EPA that a standard at the tap is unworkable. In fact, we support an MCL for source water of 1 part per billion and an MCL of 5 parts per billion at the tap.

The Centers for Disease Control is also involved in a number of activities targeted at eliminating lead poisoning. For example, they have a grant program for screening infants and children, and this is a necessary step on the road to eliminating lead poisoning. However, many more States and communities have need for comprehensive programs to combat the problem than there are available funds.

We believe that the Interagency Strategic Plan for the elimination of childhood lead poisoning is also a helpful step in the right direction. The recommended actions in the plan include increased support for programs that prevent childhood lead poisoning, increased abatement of lead-based paint and paint-contaminated dust in housing, reductions in other sources and pathways of lead exposure in children, and national surveillance for children with elevated blood levels.

We would support these activities and believe that the Lead Contamination Control Act must be reauthorized and significantly strengthened. There are two major problems that must be remedied in the coming year.

The law did not give EPA adequate authority to require States to comply with its provisions. Two, Congress never appropriated the funds that were authorized to help States and school districts comply with the law.

The rest of the information is in the written statement we have provided.

Mr. WAXMAN. Thank you very much.

[Testimony resumes on p. 175.]

[The prepared statement of Ms. Rafel follows:]

Statement of
THE NATIONAL PARENT-TEACHER ASSOCIATION

The National PTA welcomes the opportunity to present its views on the very important issue of lead exposure in the environment.

Introduction

The National PTA represents 6.8 million parents, teachers, students and other child advocates in all fifty states, the District of Columbia, Europe and the Pacific region where American parents send their children to Department of Defense Dependents Schools. Our organization was founded on the premise of parental involvement and has a long-standing policy of protecting the ecological and environmental qualities of life necessary to the development of healthy and productive youth. We believe that children should be safe from preventable health hazards of any kind, including in the classrooms where they go to learn for three-quarters of each year.

This statement presents information about the health effects of lead poisoning in children and refers to research studies, government documents, and audit reports that are well-known to the Members of this Subcommittee. The bottom line that we must acknowledge today is that the federal government is not responding in a timely or efficient manner to an environmental hazard that affects 17 percent of the children in America. We hope that the increased attention on this issue will lead to development and implementation of effective measures to reduce and eventually eliminate childhood lead poisoning.

History of National PTA Involvement

The National PTA "Legislative Directives", a document that outlines the legislative positions of our organization, includes specific support for "legislative and regulatory efforts to manage or eliminate environmental health hazards in schools and child care facilities, such as asbestos, radon, and lead..." In carrying out this directive, we have worked extensively with Congress and the Environmental Protection Agency (EPA) on a number of different activities for each of these problems.

The National PTA led an effort, in cooperation with the EPA and other educational groups, to organize regional workshops around the country to inform parents, teachers, and other school officials about the hazards of asbestos, radon and lead in drinking water. We have testified before Congress, and supported legislation--including the Lead Contamination Control Act (LCCA)--that addresses these three hazards. And, through a coalition effort with other educational groups, we worked with EPA in developing a booklet entitled, "Environmental Hazards in Schools", which includes a section on lead in drinking water.

Overview

In this statement we have been asked to focus on the following areas:

1) the health effects of lead exposure, including effects on neurological development and intelligence in children and fetuses;
2) the pervasiveness of childhood lead exposure;
3) our views on the importance of indoor sources of lead exposure, including lead paint, lead dust from lead paint, and drinking water;
4) our views about the adequacy of current and federal programs targeted at reducing lead levels in the environment; and
5) recommendations for what must be done now to reduce and eliminate lead exposure in the indoor environment.

Before beginning our remarks in each of these areas, we would like to emphasize that a clear connection exists between environmental issues and the national education goals. Those supporting the goals may be focusing too narrowly on what goes on in the classroom, as opposed to what occurs in a child's life before, and during, his or her school years. For example, goal number one states that "By the year 2000, all children in America will start school ready to learn."

According to the last available estimate, between 3 and 4 million children in the United States have blood lead levels above 15 micrograms per deciliter (ug/dL), a level high enough to cause decreased intelligence, behavioral disturbances, developmental delays, and numerous other, long lasting effects. Further, in testimony presented to the House

Subcommittee on Transportation and Hazardous Materials last September, the American Academy of Pediatrics estimated that 400,000 children are born each year with blood lead levels high enough to have neurotoxic effects. These children will not start school ready to learn. As this statement, and the others, will contend, lead poisoning is an entirely preventable disease. For the federal government not to take action to reduce, and eventually eliminate, children's exposure to lead is unconscionable.

Goal number two states "By the year 2000, we will increase the high school graduation rate to at least 90 percent." Dr. Herbert Needleman, a nationally known expert on childhood lead poisoning, who has testified on several occasions before this Subcommittee, has research data drawing the connection between lead exposure and high school dropouts. Dr. Needleman's study shows that, of children who were exposed to lead when they were young, those with the highest lead levels had seven-times greater odds of dropping out of high school, and six-times greater odds of having a significant reading disability. Do we need more compelling statistics before addressing this problem if we are serious about meeting the educational goals?

The health effects of lead exposure, including effects on neurological development and intelligence in children and fetuses

The members of this subcommittee are familiar with the grim statistics that have been repeatedly presented in testimony for years. Lead poisoning is a silent, costly epidemic that threatens the well-being of between three and four million children in America. The National PTA is not a scientific authority on the health effects of lead, but we are convinced by the body of data that has been accumulated in this field, and we agree with the experts:

LEAD POISONING IS THE NUMBER ONE ENVIRONMENTAL HAZARD FACING CHILDREN IN THE UNITED STATES, THREATENING THEM AT HOME, AT PLAY, AND IN THEIR SCHOOLS.

There are volumes of data to document lead's toxic effects. A few key sources are the 1988 Agency for Toxic Substances and Disease Registry (ATSDR) Report to Congress entitled, "The Nature and Extent of Lead Poisoning in Children in the United States;" the Centers for Disease Control (CDC) 1985 statement on preventing lead poisoning in young children that will be revised this year; and the CDC's "Strategic Plan for Elimination of Childhood Lead Poisoning."

These sources, and numerous other studies, show that lead's neurotoxic effects at relatively low exposure levels include decreased intelligence, short-term memory loss, reading and spelling underachievement, impairment of visual-motor functioning, poor perceptual integration, poor classroom behavior, and impaired reaction time. Children and fetuses are especially susceptible to these effects, because their neurological systems are rapidly developing. Young children are also more exposed to lead than older groups due to their normal activities, including "mouthing" of non-food items that may introduce lead dust into their systems. According to the CDC report, young children absorb and retain more lead on a unit mass basis than adults.

Thirty years ago, concern about lead levels in children was reserved for those children exposed to such high levels of lead that they exhibited the harsh physical symptoms of lead poisoning. Since 1970, scientific and health research about childhood lead poisoning has revealed dramatic evidence of adverse effects of lead at lower and lower levels. Most scientists recognize that even though lead toxicity may not be apparent physically, its insidious effects are taking hold in children and manifesting themselves later through attention disorders, learning disabilities, and other related problems.

As a result of more sophisticated measuring techniques and the compelling data about adverse health effects of lead at lower levels, CDC has convened experts from around the country to review and update its statement, "Preventing Lead Poisoning in Young Children". The new statement, which is expected to be released soon, will redefine childhood lead poisoning. In its 1985 statement, CDC set the threshold for action at a blood lead level of 25 micrograms per deciliter (ug/dL), although at that time the Agency acknowledged that adverse effects occurred below that level. The new statement will recommend that the threshold for lead poisoning prevention activities should be at blood lead levels of 10 ug/dL. It is expected that the revised statement will recommend treatment for children with blood lead levels above 15 ug/dL, and that communities with large numbers of children with blood lead levels above 10 ug/dL develop community-wide educational and environmental programs to address the problem.

The pervasiveness of childhood lead exposure

Childhood lead poisoning is pervasive, yet entirely preventable. Progress has been made over the past twenty years, but exposure continues because of ongoing uses of lead. According to a report on childhood lead poisoning, published by the Environmental Defense Fund in March 1990, "each year industry produces, and consumers use and discard, products containing well over a million tons of lead."

In general, children in poverty, particularly those in dense, urban areas who are already struggling with inadequate living conditions, poor nutrition, and lack of access to preventive health care, are at higher risk of exposure to dangerous levels of lead from their environments. However, recent studies now document that millions of children from all socio-economic backgrounds and all geographic areas have lead levels high enough to cause adverse effects.

We have discussed why children are more susceptible than adults to the hazardous effects of lead exposure, but must stress that prevention and early detection are key to correcting the problem. The CDC estimates that children's exposure to lead in this country costs society billions of dollars in medical costs, special education, and decreased productivity and earnings due to impaired intellectual development. While the benefits of preventing exposure to children are difficult to quantify, and it is impossible to place a monetary value on effects such as decreased school performance or a family's emotional costs, CDC estimates, through its analyses, that preventing lead exposure in the United States, and abatement of lead-based paint in older homes, are cost-effective strategies that must be employed to address the pervasiveness of the problem.

The importance of indoor sources of lead exposure, including lead paint, lead dust from lead paint, and drinking water

Despite the known dangers of exposure to lead, millions of pounds of lead continue to be released into the environment each year because of the manufacture, use and disposal of lead-containing products. Because lead is an element, it does not degrade, and its toxicity does not diminish with time. The lead that has already been dumped in the environment from years of using leaded gasoline, paint, plumbing supplies, and other products remains and must be removed to eliminate the hazard completely. The ATSDR estimates that 4 to 5 million metric tons of lead used in gasoline remain in dust and soil and children remain exposed to it.

For the most part, the average blood lead levels in this country have declined over the past twenty years because lead use has been significantly reduced in gasoline and paint. However, lead is still dispersed into the environment, and children are exposed to lead from a variety of sources, including paint, gasoline, solder, plumbing materials, batteries, crafts materials, food, water, dust, soil and air.

Experts generally agree that inhalation of airborne lead is a minor exposure pathway for individual children, except in selected areas, such as near smelters, lead-product manufacturing or processing plants, or where leaded gasoline is still used. Today, lead-based paint is the most common cause of high-dose lead poisoning in children in the United States. The ATSDR estimates that 13.6 million children under the age of seven are potentially exposed to paint containing unhealthy concentrations of lead. Exposure occurs when children ingest the paint, but also when they ingest dust or soil that has been contaminated with leaded paint.

Lead in drinking water is also a significant problem for children. Lead in water com mainly from lead products used in plumbing--pipes, solder, and flux. While Congre created a program to address this problem in schools, it has not been effective, and E

BEST COPY AVAILABLE

estimates that millions of children are still exposed to drinking water in schools with lead levels above what EPA considers acceptable. This issue is discussed in more detail later on in this statement.

Together, exposure to lead from paint, paint dust and water pose a significant health threat to children in America, and we must take action to address the problem.

Current and federal programs targeted at reducing lead levels in the environment

Lead Contamination and Control Act

The National PTA was a strong proponent of the Lead Contamination Control Act (LCCA), but is disappointed that the law has had such little effect in ameliorating the problem. When the legislation was being debated in 1988, we unsuccessfully attempted to have stronger drinking water standards and stricter penalties against non-compliance included in the bill. We still believe that this law is needed, with the stricter provisions we originally sought.

In September, 1990, EPA published the results of an audit of its and the states' roles in implementing the LCCA and other provisions of the Safe Drinking Water Act Amendments enacted in 1986. The findings of this review, described below are alarming:

- States were not adequately ensuring that school water sources were tested to protect children from lead contamination.

The LCCA requires that states develop programs to assist schools and day care centers in testing for and remedying lead contamination in drinking water. All water coolers found to be not-lead-free were to be remedied by February 1990. The EPA auditors found that states were not complying with this requirement. Some schools that tested found dangerous levels of lead in water coolers, drinking fountains, and plumbing. However, EPA suspects that the contamination may be worse than reported because some of the schools did limited or improper testing. Further, those schools that did not test at all are unaware of the potential hazards in their buildings.

- EPA's procedures--required by law--to identify water coolers that are not lead-free were not efficiently or properly implemented.

EPA was one-year late in developing an accurate list of hazardous water coolers, and in distributing it to states, as required by the LCCA. In turn, this delay may have hampered the Consumer Product Safety Commission's ability to recall and ban the future manufacture of hazardous coolers.

In addition, many schools only tested coolers on EPA's list of hazardous coolers, which means they may have overlooked serious potential hazards and continued to expose children to unnecessary health risks.

- States have not ensured that public water systems notify their customers of the dangers of lead in their drinking water, or enforced the prohibition on use of lead pipes, solder and flux in plumbing providing water for human consumption.

The result of this noncompliance is that parents, teachers and the rest of the public are not adequately informed about the hazards of lead in their water. The states say that they lack direct authority to enforce the ban on lead pipes and solder, because local building inspectors are charged with that responsibility. States are uncertain if contractors are using leaded pipes and solder, which means that homeowners may inadvertently be having lead plumbing supplies installed in their homes.

o Similarly, the audit found that not all of the schools that found lead contamination notified parents, teachers and employee organizations of the availability of test results, as required by law.

This provision was included in the law to ensure that parents would be properly notified of a school's activities in testing for and remedying high lead levels in drinking water. If performed properly, this notification would be an effective accountability measure. Parents have a right to know if their children are being exposed to high levels of lead in their schools' drinking water. Further, if the lead level in their children's school drinking water is high, parents need to determine if they should have their children's blood lead levels tested.

- The Agency has not complied with the Safe Drinking Water Act (SDWA) requirement for revising the maximum contaminant level (MCL) for lead in drinking water.

If EPA or Congress fail to take immediate action on this important issue, they are failing to protect the public health of the citizens of the United States. The following chronology of revising the drinking water standard highlights the federal government's deplorable delay tactics and procrastination over the past several years:

- In 1985, EPA proposed to reduce the maximum contaminant level goal, which is an unenforceable target, from 50 micrograms per liter (ug/L) to 20 ug/L.
- In August, 1988, EPA recommended a goal of zero, and proposed to establish 20 ug/L as the maximum level, period.
- The LCCA required EPA to lower the existing MCL for lead in drinking water by June 1988.
- In January 1989, EPA issued a guidance document for schools and day care centers to test for lead, and recommended that any water source for human consumption exceeding 20 ug/L be taken out of service immediately.

The problem remains, however, that in all these years, the Agency did not revise the standard, and the current level for public water systems for lead is still 50 ug/L. By not complying with the law, EPA has created great confusion among schools as well. According to the EPA audit report, laboratories testing water for public water systems have also been testing school water. Some of these labs have informed schools that they are within the limits established by the SDWA, as long as the results are less than 50 ug/L.

The EPA issued a Notice of Proposed Rulemaking in 1988 regarding lead in drinking water, which argued that a standard at the tap was unworkable. Then, and now, we disagree with the EPA on this point. At that time, we supported an MCL for source water of 1 ug/L and an MCL of 5 ug/L at the tap. With this standard we also recommended that public water suppliers be required to replace lead pipes in those portions of the water distribution system that are publicly owned or owned by the water supplier.

We understand that EPA officials have informed the Subcommittee that they now plan to eliminate the current tap water standard entirely. This is unbelievable considering that lead in drinking water is one of the top contributors of lead in the bloodstream of children and adults, and that over 42 million Americans have lead levels above what is considered safe. In addition, an EPA document, "Reducing Lead in Drinking Water, published in December 1986, documented that:

- lead in drinking water accounts for 15 to 45 percent of the body burden of lead;
- blood levels of lead are related to tap water lead concentrations;
- treatments to remedy lead in drinking water decrease lead exposure to children and other populations; and
- the ratio of benefit to cost is 10:1 for decreasing the MCL to 20 micrograms per liter (ug/L).

Other federal activities

In addition to the EPA, the Centers for Disease Control (CDC) have a long history of involvement in lead poisoning prevention activities. Through a provision in the LCCA, CDC received funding to:

- o screen infants and children for elevated blood levels;
- o assure referral of treatment for infants and children with elevated blood lead levels; and
- o provide education about childhood lead poisoning in communities where large numbers of children have elevated blood lead levels.

While this program is a necessary step on the road to eliminating lead poisoning, many more states and communities have need for comprehensive programs to combat the problem than there are available funds.

As part of the 1990 and year 2000 Objectives for the Nation, the U.S. Public Health Service aims to reduce, and eventually eliminate, childhood lead poisoning. The CDC developed, in cooperation with the Agency for Toxic Substances and Disease Registry, the EPA, the Department of Health and Human Services and other governmental and private-sector contributors, a Strategic Plan for the Elimination of Childhood Lead Poisoning.

This report, published in February 1991, sets forth a five-year plan to address this problem, with recommended actions that include:

- o increased support for programs that prevent childhood lead poisoning;

- o increased abatement of lead-based paint and paint-contaminated dust in housing;
- o reductions in other sources and pathways of lead exposure in children; and
- o national surveillance for children with elevated blood lead levels.

The preface of the report states, "Finding and treating children with lead poisoning is critical, but not sufficient. Preventive actions must be taken to remove sources of lead in the child's environment before poisoning occurs."

National PTA recommendations for what must be done now to reduce and eliminate lead exposure in the indoor environment

We testified before this Subcommittee in July, 1988, about the Lead Contamination Control Act. While we supported the law, we believe there were two major problems that must be remedied in the coming year:

1. The law did not give EPA adequate authority to require states to comply with its provisions.
2. Congress never appropriated the funds that were authorized to help states and school districts to comply with the law.

This year we ask that this law be reauthorized, and be amended to include enforcement provisions to assure that states will indeed comply with the law.

In addition, we need a comprehensive, preventive program to curtail children's exposure to lead. This includes federal efforts to:

- establish stronger accountability measures that will increase parental involvement, such as improved public reporting requirements, and assurances that they are implemented;
- enforce existing laws and regulations that limit or ban the use of lead;
- issue a strengthened MCL standard for lead in drinking water (Congress should consider this action among its highest environmental priorities);
- provide funding for states and school districts to help them remedy the problems in their areas;
- expand community blood lead level screening programs, particularly those targeted to at-risk populations;
- coordinate governmental and non-governmental activities, such as a technical assistance and information dissemination program to inform the public about risks and mitigation strategies, and to assist state and local governments and the private sector in solving problems; and
- research cost-effective and efficient methods for addressing the problem of lead contamination from other sources including paint, soil, food, etc.

We are in the process of reviewing legislation, currently pending in Congress, that addresses the problems of lead, radon, and indoor air. We are especially supportive of bills that address environmental hazards in the schools because children spend a great deal of time in the school environment.

For example, the Lead Exposure Reduction Act S. 391, introduced by Senator Reid (D-NV), and H.R. 1750, introduced by Representative Scheuer (D-NY), includes a requirement that EPA assess the extent to which lead paint is a problem in schools and day care centers. This is important consideration that should not be overlooked when addressing the problem of leaded paint in homes.

We supported last year, and will again during this Congress, the Radon in Schools bills--S.575, introduced by Senator Lautenberg (D-NJ) and H.R. 1794, introduced by Representative Gordon (D-TN)--which require schools in areas with high radon levels to test their buildings. We also support the indoor air bills--H.R. 106, introduced by Representative Kennedy (D-MA) and S. 455, introduced by Senator Mitchell (D-ME)--which create the framework for protecting indoor air quality.

The National PTA looks forward to working with you and the subcommittee staff to develop appropriate and effective means to protect America's children from the dangers of environmental hazards in their schools.

Ms. **Rafel**. Thank you. Mr. Packer.

STATEMENT OF JOEL PACKER

Mr. **Packer**. Thank you, Mr. Chairman.

I am Joel Packer, a legislative specialist with the National Education Association, and the NEA represents more than 2 million teachers and other school employees throughout the country.

I appreciate the opportunity to speak here today about the serious hazards of lead poisoning in children.

I want to highlight my testimony and just make a few brief points.

First, we've heard about the health effects of lead and how lead is a serious health problem and environmental problem. The NEA believes that lead poisoning is a serious educational problem as well.

As Ms. Rafel mentioned, about a year and a half ago, the President and all 50 Governors agreed on a set of 6 national educational goals to move our country forward in education and improve education by the year 2000. Among the goals are that by the year 2000, all children will start school ready to learn, that the high school graduation rate will increase, and that student achievement in math, science, and other areas will also increase.

Unfortunately, the achievement of these goals, we think, will be likely to be jeopardized by the insidious effects of lead poisoning. As we know and others will say later, children are particularly vulnerable to the adverse health effects of lead, one reason being that they absorb lead at a much higher rate than do adults. Infants absorb about 40 percent of the lead they inhale or ingest, compared to about 5 to 10 percent for adults.

And we have clear linkages from a study that Dr. Needleman did linking lead to reduced academic achievement by students. He found, in following a group of children, that first children with high lead levels were four times more likely to have an IQ below 80 than a comparable group of children with low lead levels, that the high-lead-level children dropped out of high school at a rate more than seven times that of the control group, and that the high-lead students had a problem with reading disabilities at more than six times the rate of the low-lead-level children.

In addition, children with higher lead levels had lower class standing, increased absenteeism, lower vocabulary, and lower grammatical reasoning scores. Clearly, with these effects, we are not going to achieve the educational goals that the President and the new Secretary of Education are spending so much time talking about.

In addition, the Department of Health and Human Services did an analysis about what are the actual costs for special education for children who are lead poisoned. HHS projected that about 20 percent of children with elevated blood lead levels need special education services and estimates that those services cost over $3,300 per child.

So simply reducing blood lead levels in special education costs alone will save the country hundreds of millions of dollars just in that one area, leaving aside other savings in medical care and lost earnings and other areas.

A lot of people will talk about lead paint, and we agree that lead paint is the most serious cause of high lead levels in children. But I want to talk a little bit about specifically water.

As you've heard before, EPA has estimated that about a quarter of a million children have their IQ lowered because of their exposure to elevated lead levels in water, and about 29,000 of the children require medical treatment on a yearly basis because of their exposure to lead in water.

We are particularly concerned about lead in school drinking water because of the nature that the water sits overnight, on weekends, is in contact for a longer period of time than in a typical house with the pipes and the solder, and consequently is more likely to have elevated lead levels, and our testimony outlines several examples in Maryland, in Los Angeles, New Jersey, of schools that have tested and found extremely high percentages of their fountains and taps having elevated lead levels.

We think part of the solution needs to be, as the PTA does as well, reauthorization and a strengthening of the Lead Contamination Control Act. This Act, which you and Mr. Sikorski sponsored 3 years ago, authorized $30 million a year for States to help schools test for and remedy lead contamination in their drinking water, but unfortunately, number one, the Congress has actually not appropriated any money. The administration has not asked for any money, and schools have not received any money.

And two, the Inspector General of EPA found that most schools have not done this. They have either not tested, they've tested improperly, or they've only tested certain of their fountains. And the Inspector General criticized the EPA for not aggressively pursuing methods to encourage States to do these things, to help school do these things.

We think that the law needs to be reauthorized and strengthened with a requirement that schools must test for lead. There are other laws on the books that require schools to test for asbestos. There is legislation pending that would require schools to test for radon gas. The linkage between lead is even greater to the effects on children, and we think it should be required that in this area as well, schools should have to test to see if there is lead poisoning in their drinking water.

Thank you.

[Testimony resumes on p. 191.]

[The prepared statement of Mr. Packer follows:]

TESTIMONY
OF THE
NATIONAL EDUCATION ASSOCIATION

Mr. Chairman and Members of the Subcommittee:

I am Joel Packer, a legislative specialist for the National Education Association which represents more than two million professional and other education employees in the nation's elementary, secondary, vocational, and postsecondary schools. I appreciate the opportunity to speak to you today about the serious hazards of lead in America's schools.

In September 1989, the President and the nation's governors endorsed six National Education Goals. The first goal states: "By the year 2000, all children in America will start school ready to learn," the second goal recommends improving the high school graduation rate, and the other goals focus on achieving educational excellence.

The achievement of these vital goals may well be jeopardized by the insidious effects of lead poisoning.

Health Effects of Lead

Long-term exposure to lead can result in decreased hemoglobin, destruction of red blood cells, and anemia; it can damage the kidneys, reducing their ability to retain nutrients and excrete waste; it can impair nerve function, interfere with brain development, and alter behavior; it can produce pregnancy complications, premature birth, and reduced birth weight; and it can cause heart damage, increase blood pressure, and increase risk of strokes and heart attack.

Children are particularly vulnerable to the adverse health effects of lead. For instance, a recent study by the Office of Technology Assessment (OTA) on neurotoxicity states that children ingest and inhale more lead per unit of body weight than adults and are thus more vulnerable to its effects. Young children are likely to ingest paint, soil, and dust during normal mouthing activities. Children also have a higher absorption rate for lead than adults -- 40 percent for infants compared to 5 to 15 percent for adults. Children have less bone tissue in which lead is stored, leaving more lead in the blood that is free to exert toxic effects on various body organs, including the brain.

The recently released (February 1991) Department of Health and Human Services report, Strategic Plan for the Elimination of Childhood Lead Poisoning, stated "lead poisoning remains the most common and societally devastating environmental disease of young children...in the United States, millions of children from all geographic areas and socioeconomic strata have lead levels high enough to cause adverse health effects."

In 1988, the Agency for Toxic Substances and Disease Registry (ATSDR) estimated that between three and four million children under age six in the U.S., 17 percent of all children, have blood lead levels above 15 micrograms per deciliter (ug/dl) in 1984 -- levels high enough to adversely affect intelligence and behavior.

The effects of lead have proven to be longlasting. Dr. Herbert Needleman, a nationally-renowned expert in childhood lead poisoning, found that children with high lead levels were almost four times more likely to have an IQ below 80 than those with low lead levels. In later years, the high-lead students had a dropout rate more than seven times higher than the control group, and evidenced reading disabilities at more than six times the rate of comparable students with low lead levels. In addition, the children exposed to higher lead levels had lower class standing, increased absenteeism, and lower vocabulary and grammatical reasoning scores.

In fact, officials for the Centers for Disease Control have recommended yearly blood tests for young children at risk for lead poisoning after a Wisconsin boy died in March from exposure to lead-based paint. The child was found to have a blood-lead level of 144 ug/dl -- many times the level known to cause brain damage. Lead had begun to replace the calcium in his bones.

CDC will soon release a new threshold level for blood lead poisoning. In 1985 it was 25 ug/dl; it is expected to be lowered to 10 ug/dl because we now know that adverse health effects are caused by even this level of lead.

The Department of Health and Human Services' February 1991 strategic plan for reducing lead poisoning in children did a cost-benefit analysis of lead exposure to children. Since children with high blood lead levels are more likely to need special education services, such as reading specialists, school psychologists, or other counselors, HHS assumed that 20 percent of children with blood lead levels above 25 ug/dl would need special education for an average of three years. The projected cost of such special education was projected to be $3,331 per child.

In addition, preventing a 1 ug/dl increase in blood lead levels, regardless of the starting level, would increase lifetime earnings by $1,147 per child.

Sources of Lead

Sources of lead include paint, gasoline, solder, and smelters and enter the body via multiple pathways such as water, air, dust, soil, and food. However, the most prevalent and dangerous sources of lead to children are water and paint.

NEA has been quite concerned for several years about the dangers of lead in drinking water. Lead in drinking water can significantly increase total exposure to lead. EPA estimates that lead in drinking water can account for 20 percent to 50 percent of total lead exposure in young children. Some of this exposure occurs in schools and day-care centers.

The Environmental Protection Agency (EPA) estimates that as a result of lead contamination in drinking water, each year some 29,000 children require medical treatment; more than 240,000 children experience some irreparable loss of intelligence; some 82,000 children risk diminished physical stature; and another 82,000 risk blood disease. Indeed, the hazards of lead contamination begin before birth. EPA estimates some 680,000 fetuses are at risk each year because of pregnant women's exposure to hazardous levels of lead in drinking water.

The pattern of water use in schools makes students particularly susceptible to lead poisoning because water often sits in the pipes overnight, over weekends, or over vacations, becoming heavily contaminated in the process.

A major source of lead in drinking water is the solder used to join sections of copper pipe. Until recently, this solder contained up to 50 percent lead. Lead can also enter drinking water as a by-product of the corrosion of lead pipes, fixtures, or other parts of a plumbing system. In addition, refrigerated water coolers have been found to contain lead-lined water tanks and other lead parts.

Many schools have taken steps to test for and reduce or eliminate lead contamination in school plumbing systems. And yet, a comprehensive program to eliminate lead contamination from all sources must be national in scope.

As part of our efforts to inform schools about lead contamination, NEA assisted in the preparation of an EPA document entitled Lead in School's Drinking Water, released in January 1989. The publication is designed to provide schools guidance in testing and methods for reducing or eliminating lead in schools' drinking water.

Lead paint is the major cause of high lead levels in children. Exposure occurs when children ingest chips or flakes of lead paint and when they ingest lead-based paint contaminated dust and soil.

NEA is unaware of any studies analyzing to what extent such paint is present in schools and whether such paint results in lead dust being inhaled in schoolchildren. At least 15 percent of all school buildings were constructed before 1939, and another 31 percent were constructed before 1959. It is reasonable to conclude that many still contain lead-based paint.

ASTDR estimated that in the mid-1980s 13.6 million children under the age of seven were exposed to lead-based paint in their homes. About 1.2 million of these children had blood lead levels above 15 ug/dl.

Lead-soldered cans also pose a great risk. CDC believes that the use of lead-solder in cans for commercial use, including use in schools, is a danger for our children that continues to exist.

In recent years, regulatory and voluntary actions have been taken that significantly reduced or eliminated lead from many consumer products in the United States, including new paint and gasoline. However, millions of American's, particularly children, remain at risk, and further steps must be taken.

Because these problems are so prevalent among so many children and the risks are so widespread, we need to establish a comprehensive framework in which to decrease the harmful effects of lead.

Need for Legislation

Part of this comprehensive approach would include the enactment of legislation such as H.R. 1750, the Lead Exposure Reduction Act of 1991, recently introduced in the House by Rep. James Scheuer (D-NY) and sponsored by Sens. Harry Reid (D-NV) and Joseph Lieberman (D-CT) in the Senate (S. 391). This bill would help in dealing with the problems of lead and would be a significant step toward protecting the health and safety of all citizens.

The bill restricts the use of lead in products likely to cause additional contamination such as paint, plumbing fittings/fixtures, pesticides, toys and game pieces, and weights.

The bill also requires labeling products that may pose a risk to human exposure to lead. NEA is pleased to see that H.R. 1750 would require a long-term study on the relative contributions of drinking water, food, air, soil, lead-based paint and dust from the paint to the total body burden in children. It would also require public education and outreach efforts focused on the general public and health care professionals to increase awareness of risks from household, school, and day care sources of lead. This bill also includes a provision NEA recommended last year that directs ATSDR to do an assessment of lead exposure of children from schools and day care centers.

H.R. 1750 also mandates a comprehensive program promoting safe, effective, and affordable monitoring, detection, and abatement of lead-based paint and other lead exposure hazards, including: environmental lead and blood analysis standards, lead abatement contractor training and certification curricula, testing and evaluation of lead detection technologies, evaluation of lead dust abatement techniques, evaluation of new lead paint abatement technologies, and classification of abatement wastes. These provisions are vital to ensure that lead-based paint abatement is conducted properly and safely.

Another piece of legislation that has the potential to assist in the reduction of the environmental hazards of lead is the Lead Contamination Control Act (LCCA) of 1988, (P.L. 100-572). NEA was instrumental in the enactment of this measure that authorized

$30 million per year to states to assist schools with eliminating lead in drinking water. We thank Chairman Henry Waxman (D-CA) and Rep. Gerry Sikorski (D-MN) for their strong leadership on this measure.

However, NEA is disappointed that no federal funds have ever been appropriated for this state grant program. While other threats to our children, such as drugs, have been met with federal resources, we cannot afford to ignore the evidence that this problem requires immediate action through the provision of federal funds. We ask your help and help from the Members of the Appropriations Committee to fund this vital measure.

NEA also calls for the reauthorization of LCCA which is scheduled to expire at the end of Fiscal Year 1991. The LCCA, including state grants, should be reauthorized either as a separate bill, for at least the next three to five years, or as part of a comprehensive lead bill.

Also, this bill must be strengthened. As part of this reauthorization, the LCCA should require that all schools be tested for lead and funding assistance be provided to school districts for such testing. In addition, because schools which do such tests do not have to report their results either to EPA or a state agency, we recommend that a reauthorization of LCCA include a requirement for reporting school test results and a yearly report by EPA to Congress on the progress schools are making in addressing this problem.

Unfortunately, despite the enactment of the LCCA, the level of lead in school water supplies remains dangerously high, according to an audit released by EPA's Inspector General last October. The school districts reviewed in the survey -- 13 in the Mid-Atlantic region -- did not test their water, did not follow federal testing standards, or only did a limited amount of testing. Under the LCCA, all faulty water coolers emitting dangerous levels of lead should have been repaired or removed from the nation's schools in February of 1990, but this has not occurred according to the auditors.

Some states have begun to move forward on their own in lead abatement efforts. Minnesota, for example, tested schools and took remedial action last year. Maryland discovered that 28 percent of the public schools it tested were found to have dangerous lead levels. The Los Angeles Unified School District shut off all water coolers in the school system and began a comprehensive testing program after finding that 30 percent of the district's refrigerated coolers produced elevated lead levels after the water was allowed to sit overnight, and 60 percent did so after a seven-day vacation. The Ocean City (NJ) Board of Education had each of the 109 fountains and sinks used for drinking in the elementary, middle, and high schools checked and found 37 outlets exceeding the level of 20 parts per billion (ppb) of lead in the water -- EPA's recommended maximum level of lead contamination of water. Also, in Fairfax County, Virginia, the district tested 855 water coolers in its schools in 1988 and removed more than 50 of them due to a high lead content in the water.

States and school districts told auditors that they have limited budgets to carry out water safety laws. For instance, a spokesperson for the Richmond Public School System stated that "...it's a fairly expensive procedure and Richmond, like other urban school systems, is facing a further relative reduction in its school budget." It is very unfortunate that the Administration has never asked for funding of state grants to help alleviate this problem.

The Inspector General's report points out that EPA had even conducted a survey of lead in drinking water in nine states in order to assess the effectiveness of LCCA activities. EPA's report indicates that fewer than half of the school districts had tested their buildings for lead in drinking water at the time of the survey.

The survey also found that some school administrators did not take appropriate corrective action because of confusing Federal requirements.

EPA's current regulation is 50 ppb of lead in drinking water -- a level which is far too high. In 1988, EPA proposed to reduce that level to 20 ppb and currently encourages schools to live by this standard. However, many schools did nothing unless the lead in the water exceeded 50 ppb.

The Inspector General's report said that states should fulfill their responsibilities under the LCCA, and states should ensure that schools test their water and correct any lead problem.

Drinking Water Standard for Lead

We also submitted recommendations to the EPA in October 1988 stating our concern at EPA's failure to set a maximum contaminant level for drinking water at the tap. Simply setting a standard for lead in source water entering the distribution system is patently insufficient. People drink water from the tap, not the source, and much of the contamination comes from lead pipes and solder after the water enters the system. In fact, the Safe Drinking Water Act requires EPA to establish a MCL at the tap.

It begs the question to say, as does EPA, that you cannot measure the rate of contamination in the pipes, and therefore, could not establish an MCL at the tap. These issues have little, if anything, to do with each other. NEA agrees with the language of the House Committee Report (H.R. Rep. No. 93-1185, p. 13, 1974) on the bill that eventually became the Safe Drinking Water Act of 1974 that "(s)ince drinking water regulations are intended to be met at the consumer's tap, the committee anticipates that monitoring would include tap sampling."

The only reason permitted by the statutes for not setting an MCL at the tap is if it is not "economically or technologically feasible to ascertain the level of the contaminant." (SDWA section 1412 (b) (5).) There is no question that the testing technology is available and economically feasible; therefore, EPA is required to set a maximum contaminant level (MCL) at the tap.

Almost three years have elapsed since this proposed deadline, and the Agency still has not modified the MCL for lead in drinking water. It has become clear that Congressional action is necessary to establish this new standard.

NEA is working with the Alliance to End Childhood Lead Poisoning, and is a cosponsor of its first national conference to be held here in Washington, D.C., on October 7 and 8 of this year. The Conference -- "Preventing Childhood Lead Poisoning" -- will review the latest research on lead, when and how to screen for lead poisoning, and how local programs can begin to shift from reaction to primary prevention.

Childhood lead poisoning is entirely preventable. The enactment of the Lead Exposure Reduction Act of 1991 (H.R. 1750) and the reauthorization and expansion of the Lead Contamination Control Act of 1988 will help to lessen the detrimental effects of lead poisoning. NEA looks forward to working with the Subcommittee on these important legislative efforts.

We now have the opportunity and ability to eradicate the threat of lead poisoning on young minds and bodies. Please help us to ensure that all children will enter school healthy and ready to learn and will stay healthy throughout their learning years.

Thank you.

Mr. WAXMAN. Thank you, Mr. Packer. Mr. Ryan.

STATEMENT OF DON RYAN

Mr. RYAN. Thank you, Mr. Chairman.

My name is Don Ryan. I am executive director of the Alliance to End Childhood Lead Poisoning. We are a new national public interest organization focusing exclusively on ending the epidemic of childhood lead poisoning.

The Alliance was formed by leaders from several fields: medicine and public health, low-income housing and environmental protection, children's welfare and education.

Five of the other witnesses who have appeared today are members of the Alliance's Board or Technical Advisory Committee.

Several of the leading researchers on the health effects of lead are also associated with the Alliance.

In the beginning, I would like to make two policy observations about the status of the science and the human health effects of lead.

First, we know more about the health effects of lead than any other environmental toxin. The uncertainties and honest debate which surround some environmental health hazards are not present with lead.

Second, I want to point out a fundamental difference between lead and many other environmental hazards. Children in this country do not have a risk of lead poisoning, a 1 in a million risk or a 1 in 1,000 risk. One out of every six kids in this country under age 6 is lead poisoned. There is consensus on that fact. EPA and HHS have testified before Congress that 3 to 4 million children are suffering neurotoxic effects from lead.

As you well know, there are a multitude of sources of lead poisoning. We commend this subcommittee for the leadership that you have shown with the Safe Drinking Water Act and your continuing pressure on EPA to produce workable, enforceable regulations. Drinking water nationwide, populationwide, is a serious source of lead. It contributes a couple points to all of our background levels. In infants and in infant formula, it presents the potential of poisoning.

But I must tell you today, Mr. Waxman, that drinking water is not the cause of the epidemic of childhood lead poisoning in this country. The overwhelming cause of childhood lead poisoning, the source of the most intensive exposures, the unattended problem is lead-based paint and dust from paint in homes.

There is also consensus on this fact. EPA and HHS have both identified lead paint poisoning as the problem. Even the Department of Housing and Urban Development has now conceded that lead paint presents a serious problem. The past several years, the past 20 years, the Department of Housing and Urban Development had dismissed lead paint poisoning as a nuisance level housing problem.

Let me briefly, sir, review for you the statistics which HUD has submitted to Congress in its survey of lead paint hazards in private housing. Approximately half of all houses in this country, privately owned homes, have some lead-based paint. The mere presence of paint does not necessarily imply an immediate hazard, but it is very important to note that 20 million homes, 20 percent of the U.S. housing stock, has hazardous conditions as we speak today, either chipping and peeling paint, leaded paint, or high lead dust levels.

And in those hazardous homes, 3.8 million of those homes currently house young children under age 6, leading HUD to coin the term "priority hazard."

I would like to point out how closely this number of 3.8 million homes corresponds to the EPA and HHS estimates of 3 to 4 million children who are lead poisoned.

Now how did we get here? In 1971, Congress established the national mandate to wipe out lead paint poisoning. The assignment was given to HUD under the auspices of our mission of decent, safe, and affordable housing. That decision has had far-reaching implications.

First off, HUD's control—HUD's regulation of lead-based paint hazards extends only to federally associated housing. This means federally assisted housing and federally insured housing. HUD has no reach over the private housing stock where most of the worst problems exist.

Over the past 20 years, HUD has ignored the risk of lead-based paint. They have followed an unspoken policy of doing as little as possible about the problem. This has resulted in a de facto policy in most cities across the country that lead-based paint hazards would be cleaned up after and only after a child is poisoned. And what made this policy all the more bankrupt was that it was teamed with the termination of categorical grants from CDC to support local screening programs.

Mr. Chairman, the Alliance has a number of specific recommendations for action, and they are included in our written remarks.

Mr. **Waxman**. Thank you very much.

[The prepared statement of Mr. Ryan follows:]

TESTIMONY OF

ALLIANCE TO END CHILDHOOD LEAD POISONING

April 25, 1991

Before

Honorable Henry Waxman, Chairman
Subcommittee on Health and Environment
Committee on Energy and Commerce
U.S. House of Representatives

Presented by Don Ryan, Executive Director

The Alliance To End Childhood Lead Poisoning is a new national nonprofit public interest organization which is focusing exclusively on ending the epidemic of childhood lead poisoning. The Alliance is a new organization -- barely six months old -- formed by leaders in medicine and research, public health, environmental protection, low-income housing, education, and children's welfare. Although the Alliance's Directors come from different backgrounds with very different perspectives, they share one thing in common: a deep frustration with the government's inaction and inattention to childhood lead poisoning.

The Alliance was born from the failures -- the utter failures -- of Federal agencies to respond effectively to the epidemic of childhood lead poisoning over the past two decades since the Congress established the national mandate to wipe out this disease. The Alliance's mission is to bring all resources to bear -- other organizations, scientific and technical knowledge, public policy, economic forces, and community action -- to raise awareness and change perceptions about childhood lead poisoning and to develop and implement effective national prevention programs. Our comprehensive approach to the problem combines education and advocacy efforts with technical assistance and policy support.

The Alliance is funded about half by private foundations and half by special project grants from Federal agencies. We accept no funds from industries with a direct economic stake in this issue: the lead or paint industries, cleanup contractors, or abatement product manufacturers. I would like to insert for the record biographical sketches of our Board of Directors to demonstrate the depth and diversity of the Alliance. The Alliance also has a standing Technical Advisory Committee of more than 60 experts from across the country representing every field and discipline which is involved in developing and implementing solutions to lead poisoning.

Health Effects

Many of the leading researchers on lead's health effects serve on the Alliance's Board of Directors or our Technical Advisory Committee. Because I am neither an M.D. nor a toxicologist, I will not try to review the scientific literature in any detail. I know that this Subcommittee has been briefed in detail on the litany of problems caused by lead: mental retardation, IQ reductions, hyperactivity, reading and learning problems, attention span deficit, hypertension, liver and kidney damage, and at high levels coma, convulsions and death. I would, however, like to offer a few policy observations on the status of the science on the human health effects of lead.

First, it is extremely important to note that we know more about the health effects of lead than any other environmental toxin. In just the past 15 years there have been scores of studies done in the U.S. and worldwide which document lead's adverse health effects -- animal studies, clinical studies, and epidemiological studies. These are reviewed exhaustively in EPA's 1986 NAAQS Draft Criteria Document on lead. The overwhelming consensus among scientists is that the data on the toxicity of lead at low doses are extremely compelling, if not overwhelming.

Both EPA and CDC have concluded that adverse health effects in young children and fetuses occur at blood lead levels as low as (and possible lower) than 10 ug/dl. On Monday and Tuesday of this week, CDC's formal advisory committee on childhood lead poisoning met for the last time recommend that a the blood-lead threshold defining childhood lead poisoning be reduced to 10 ug/dl. CDC is expected to make official this change in its threshold for lead poisoning in children this summer. And within the next month the National Academy of Sciences is expected to release its own independent, exhaustive assessment of lead's health effects. The uncertainties and honest debate which surround so many environmental health risks simply do not exist with lead.

Second, I want to point out a fundamental difference between the health hazards of lead and virtually all other environmental contaminants. Most other risk assessments are built on multi-stage models which estimate exposures, estimate dose-response curves, and make assumptions in extrapolating from mouse to human. If the risk of excess cancer is one in a million over a lifetime, regulatory action usually begins. Lead poisoning is fundamentally different. U.S. children do not have a one-in-a-million risk of lead poisoning -- one out every six children under age six is lead poisoned. When we have been trained to think and communicate in terms like "10 to the minus 6," it is difficult to grasp that 17 percent of the young children in the U.S. today are lead poisoned.

Both EPA and HHS have testified before Congress in the past few months that between three million and four million U.S. children are suffering adverse effects from lead in their bodies today. Lead poisoning is not an environmental risk in the usual sense; lead poisoning is an epidemic, a silent epidemic, and a long unattended epidemic. Lead poisoning is our best kept environmental health and public health problem.

Sources

We are all exposed to lead from a multitude of sources: lead-based paint; emissions into the ambient air from gasoline, industrial sources, and municipal incinerators; drinking water; food (from lead solder in food cans and poorly glazed ceramics; soil; hobbies; and lead in the workplace and lead dust brought home from the workplace. Over the years, the fact that exposures to lead come from this variety of sources has been used as an excuse for not regulating or controlling any particular source. These arguments are specious -- these arguments are dishonest -- and these arguments are still discouraging steps to end lead poisoning today.

This Subcommittee was responsible for the advances in the 1986 Safe Drinking Water Act amendments and has been pushing EPA for years to tighten its standard for lead in drinking water. We are well aware of your continuing efforts to extract from EPA meaningful, protective, and enforceable regulations to control lead in drinking water. The Alliance commends this subcommittee for your leadership, and we support your efforts to protect the public and reduce lead levels in drinking water.

At the same time, Mr. Chairman, we believe it is important, as this hearing is doing today, to focus attention on the primary cause of childhood lead poisoning: lead based paint and dust in homes. Drinking water is a significant source of lead population-wide because it adds several micrograms to all of our background levels. But, drinking water is not the cause of the epidemic of childhood lead poisoning in this country. The real culprit is lead-based paint -- and there is now consensus across Federal agencies on this fact.

The overwhelming significance of lead-based paint to childhood lead poisoning was first made clear by the Agency for Toxic Substances and Disease Registry's 1988 Report to Congress, The Nature and Extent of Lead Poisoning in the United States. Since EPA is organized along media lines, there was reluctance, until very recently, to take a comprehensive, strategic look at childhood lead. For years, in fact, EPA discounted lead-based paint poisoning as a HUD problem, not even bothering to evaluate these risks in its "Unfinished Business Relative Risk Assessment Report." In the past year, however, EPA has undertaken a cross media analysis of lead risks and concluded in its Integrated Lead

Strategy that lead-based paint and dust is the primary cause of childhood lead poisoning.

Even the Department of Housing and Urban Development, which had long dismissed lead paint as a nuisance-level problem, has finally acknowledged the scope and severity of these hazards in its December 1990 Report to Congress on lead paint in private housing. The data from HUD's national survey document the scope and severity of lead paint and dust hazards in our indoor environments. HUD's report concludes that more than half of homes and apartments built before 1978 contain some lead paint -- 57 million units altogether. Of course, like asbestos, the mere presence of leaded paint does not indicate an immediate hazard. But HUD found hazardous conditions (chipping and peeling leaded paint or high lead dust levels) in an estimated 20 million houses. That means that lead paint and dust hazards are present today in almost 20 percent of U.S. homes.

According to this same Report to Congress, 3.8 million of those homes now have families with young children living in them, prompting HUD to coin the term "priority hazards." That's 3.8 million homes in which young children are now living in the presence of peeling lead paint or high lead dust levels. I want to point out how closely this number corresponds to the EPA and HHS estimates of three to four million lead poisoned children nationwide. What this means is that if a young child is living in one of those homes, there is an excellent chance that he or she will become lead poisoned.

I also want to comment briefly on the risks of another source of lead -- lead in soil -- which is the subject of continuing discussion and debate. As it turns out, lead is the most commonly found substance at Superfund sites, which has raised issues about action levels and cleanup standards. EPA has been using 500-1000 ppm as the acceptable threshold in its interim guidelines and consideration is now being given to reducing those levels. The Alliance fully supports measures to clean up lead at Superfund sites to levels fully protective of human health. At the same time there are those who use the fact that soil in many urban areas has lead levels of 200-300 ppm as an excuse for not proceeding with the abatement of hazards from paint and dust in the indoor environment. Research must continue on the relative roles of all sources and pathways for lead exposures. At the same time we cannot allow our attention to be distracted from what almost experts and local lead poisoning prevention program staff know is the source of the most intensive exposure -- lead-based paint and dust indoors.

Historical Backdrop

In 1972 the Congress established the national mandate to wipe out childhood lead poisoning caused by lead-based paint. It is noteworthy that it was the Banking Committees, with jurisdiction over Federal housing programs, which drafted this legislation. Primary responsibility was given to the Department of Housing and Urban Development -- under the auspices of our commitment to "decent, safe and affordable housing." The Federal response to lead paint poisoning was therefore limited to housing units directly associated with Federal subsidies and loan guarantees. That initial decision to assign primary responsibility to HUD has had far-reaching implications.

In Administration after Administration at HUD, lead-based paint hazards have been down played and dismissed. Unfortunately, HUD has no health or risk assessment framework in which to grasp these risks. And lead paint runs counter to HUD's primary mission of providing subsidies to house and shelter as many as possible at a cost as low as possible. The plain truth is that HUD ignored the risks of lead paint -- denied the existence of the problem -- and for years followed the unspoken policy of doing absolutely as little as possible. Even after law suits and court orders, it took HUD five years to write regulations governing public housing. HUD's timid administration and enforcement resulted in a de facto policy in most cities across the country that lead paint hazards in homes would be abated whenever a lead-poisoned child was found. We were, in fact, using young children as "lead detectors."

What made this policy all the more empty was the fact that it was accompanied by the termination of CDC's categorical grant program funding state and local screening programs. In 1981, as part of the Omnibus Budget and Reconciliation Act, these grants were zeroed and rolled into the Maternal and Child Health Block Grant program, which then received an overall funding reduction of 25 percent. The result was that many local screening programs died and almost all withered. But, just as important as these reductions in grant funds, the 1981 Act eliminated the system and the staff at CDC for collecting standardized data on lead poisoning. Over the 1980's, local programs were left in a free-fall and the national system of data reporting disintegrated. In the meantime, the science advanced to demonstrate clearly the adverse effects of lead at low levels.

The Federal Response Today

The past year has seen tremendous changes within the Administration on childhood lead poisoning -- changes in the right direction -- but changes which still fall desperately short. HUD has finally acknowledge the reality of the hazard and developed national estimates of the hazard in private housing. At the same time, the Department's program attention is limited almost entirely to public housing -- 1.4 million units nationwide. Even the implementation of requirements for inspecting and abating lead hazards in public housing is fraught with problems. Field staff and public housing authority staff have not been properly trained and serious hazards are going unattended in many areas.

Virtually no progress has been made in dealing with lead hazards in the other housing stock. HUD has refused to include any mention of lead hazards in its requirements for every city to assess their local low-income housing needs.

HHS has developed an excellent strategic plan, but a plan is only a plan without the programs, policies and resources to implement it -- all of which are still lacking. EPA has conceded that lead-based paint and dust in homes is the most serious cause of childhood lead poisoning. But in the next breath, EPA states that its role is only technical assistance to HUD.

There is an informal Federal interagency task force which meets regularly and coordination among agencies is much better than in the past. But this coordination still only amounts to reporting information on what each agency is doing. There is no coordinated, strategic approach to the problem through which Federal agencies can identify the critical obstacles, make clear assignments of responsibilities, and focus their resources. In several key areas, confusion remains over which Federal agency is responsible.

Specific Problems and Inadequacies

Public Education and Awareness -- Public awareness of the hazards of lead paint and dust and the dangers of home renovation projects is very low. Each of the Federal agencies identifies education as critically important in their plans and reports to Congress. Yet none of the Federal agencies have efforts underway in this area and primary responsibility for education has not been determined.

Technical Information and Assistance -- Homeowners, tenants, landlords, parents, and contractors are concerned by reports of the dangers of lead poisoning and are looking for technical information and advice. The only technical materials available on lead-based paint testing and abatement are a 4-page CPSC warning paper and a 600-page HUD document written specifically for public housing authorities doing complete renovations. There is no system in place to take inquiries from or provide information to the public.

Universal Screening -- The Centers for Disease Control will be recommending this summer that all children be tested for lead poisoning starting at age 12 months. Currently, nine out of ten children are never screened for lead poisoning. CDC's new guidelines will also call for blood-lead screening instead of using the FEP proxy test. No steps are being taken to address the serious laboratory capacity problems or to reduce the costs of blood-lead testing. There are also no funds in HHS' budget to support an education campaign aimed at encouraging private practitioners to screen.

Risk Assessment and Detection Tools -- The statute currently defines lead hazards in public housing in terms of the presence of lead-based paint using a specific (XRF) detection technology. Wherever lead paint is found the statute requires its abatement in the course of public housing modernization projects. Many experts have little confidence in the accuracy or reliability of XRF test results. In addition to better detection technologies, better tools are needed for assessing risks and setting priorities since over half of U.S. housing has some lead-based paint. Fundamental questions need to be answered in terms of the importance of dust versus paint versus other sources, "How clean is clean," and the role of preventive maintenance versus complete abatement.

Environmental Laboratories -- In the past few years, much greater emphasis has been placed on the risks of lead dust. Dust wipe samples are used for initial risk assessment as well as post-abatement sampling to determine adequate cleanup. Currently, there is no system in place to assure proper laboratory testing of dust wipe samples. There are no standard test methods, no scientific protocols, no standard reference materials, no proficiency testing, no quality control, no system for assuring standardization whatsoever.

Reducing the Costs of Abatement -- All sides agree that the costs of abating lead-based paint must be reduced. The savings from even modest improvements and economies in abatement costs will be tremendous, yet almost nothing is being done by EPA or HUD on research on new techniques. The private sector is now marketing over 20 new products -- strippers, encapsulants, chemical spot test kits. There is no system in place to evaluate these products to determine which ones work and which ones are safe. EPA is not currently evaluating these products or developing performance standards, leaving consumers at the mercy of the marketplace.

Contractor Certification -- A new industry will be required to clean up lead paint hazards safely and effectively. Currently, the vast majority of contractors are using improper methods which often aggravate lead exposures. As with asbestos, nothing is worse than a lousy abatement job. A system urgently needs to be put in place to assure that contractors and workers are properly trained and qualified. HUD has asked EPA to handle lead-based paint abatement contractor and worker training and certification, but EPA has not yet taken steps to establish any system. The risks to workers are serious and protective equipment and proper work practices are of paramount importance. OSHA worker protection regulations are also inadequate and badly in need of updating.

Summary

Lead poisoning is the most serious environmental health hazard in the U.S., adversely affecting over three million young children. The primary cause is lead-based paint and dust in homes, an extremely significant hazard in our indoor environments. More than 20 percent of American homes have chipping and peeling lead-based paint or hazardous levels of lead dust. Almost four million of these "priority hazard" homes now house families with young children.

Twenty years after the Congress established the national mandate to eliminate childhood lead poisoning the epidemic continues. Both the public and health professionals are largely unaware of the hazards and the steps which can be taken to protect children. The vast majority of lead-poisoned children are never identified because nine out of ten children are never tested. A fundamental shift is required in our approach to the problem -- from reaction to prevention.

The Federal response has been inadequate and ineffective and cities and states have been left holding the bag. Although lead paint is found in housing, the problem of childhood lead poisoning is a public health and environmental health issue of overwhelming importance. Although HUD clearly has certain program implementation responsibilities in Federally associated housing, EPA has direct responsibilities in many areas including research, standards setting, risk assessment, technology evaluation, and contractor and worker training and certification.

The epidemic of childhood lead poisoning will not be stemmed by concentrating on Federally-associated housing. This epidemic will not be stemmed by Federal regulations. The two biggest hurdles are education and infrastructure building. The public must be informed of the risks through a responsible program of information and risk communication. The Alliance believes that HHS and EPA are the proper agencies to handle this responsibility. Second, systematic steps must be taken to build the national infrastructure to provide the capacity in terms of laboratories, technical knowledge, trained workers and certified contractors to address these hazards safely and effectively. Based on their experience gained with and the lessons learned from implementing national proficiency and training programs, EPA is the only Federal agency capable of tackling this assignment.

Additional direction is required from the Congress to have EPA meet these responsibilities. In other areas, clarification is needed on the division of responsibilities among Federal agencies. There is also a clear need for additional resources to address many of these needs. Federal investments in reducing the costs of abatement will be repaid many times over in savings from reduced cleanup costs -- and in savings directly to the Treasury in the costs of Federally-subsidized cleanups in low-income housing.

Mr. **Waxman**. Thank you very much. I appreciate the testimony that we've received from all of you.

Let me start with Dr. Silbergeld. It's a pleasure to welcome you back to our subcommittee. I found your statement regarding lead exposure of fetuses especially compelling.

The theory is that lead is stored in the bones and then released in utero to the fetus? Is that the scientific theory?

Ms. **Silbergeld**. Well, we've known for many years that most of the lead is, in fact, stored in your body. At any one time, approximately about 90 percent of the lead in our bodies is in our bones.

Until very recently, we've assumed that that was really a protective device, and while the lead remained there for a long period of time and gave us the opportunity to assess cumulative exposures, there was not much thought that this might have any toxic implications.

However, we first observed that at menopause there was a substantial and rather sudden increase in blood lead concentrations that was only explained by a substantial change in bone physiology. Considering this finding further, we explored the data again and detected that there was another impact on bone stores of lead related to pregnancy. And we know that the physiology of pregnancy includes a substantial requirement for calcium for the fetus to grown and develop.

Unfortunately, one of the reasons fundamentally why lead is probably so toxic is its ability to fool the body into thinking that it is calcium in many ways, so that therefore as the fetus grows and demands calcium from the mother's circulation, it receives both calcium and lead, and if that calcium is drawn from the bone, the lead comes along at the same time.

Mr. **Waxman**. Now why would you think that the father would be as much a contributor to a lead problem of a fetus?

Ms. **Silbergeld**. Well, we think that, again, because of very recent data showing that if we, in an animal model of studying the effects of lead on early development, if we expose the male animal to lead and then cease that exposure prior to breeding, we produce offspring where the mother has not been exposed at all, and in these offspring, solely related to male exposure, is a substantial derangement of brain development.

So again, I think, Congressman, it relates to an erroneous assumption we made about where lead goes in the body. Just as we in the past thought putting lead in the bone was acceptable—it got it away from the brain—within the cell, in fact, until very recently, people have proposed that the fact that lead goes to the nucleus of the cell and is deposited is okay, that that is some type of sequestering device.

But the nucleus of the cell is where the DNA is, and having all that lead so close to the genetic machinery of inheritance and early development may, I think in the future, prove to be one of the riskiest and most long-term damages associated with lead.

Mr. **Waxman**. Thank you. Well, that's pretty frightening.

Ms. Rafel and Mr. Packer, I want to thank you both for joining us. You've raised in your testimony an issue that I see as particularly important, the linkage between national education goals and the pervasive childhood lead poisoning problem in this country.

In your view, is it possible for us to achieve education goals if we don't do a better job of reducing childhood lead exposure?

Ms. **Rafel**. Well, I think that not only on an emotional, but also on a scientific level, if we don't start at early childhood levels with children's problems, they can't be expected to go to school and learn, and I think lead is certainly an important element there.

Mr. **Waxman**. I am sure you would agree.

Mr. **Packer**. Absolutely. I mean, the first of the goals is that all children will start school ready to learn, and we know that the greatest impact is on the youngest children, and we hear now even on fetuses, and if they already come to school with their IQ lower than, perhaps, similar children who haven't been poisoned, they're not going to be as ready to learn as they should be, and it's going to follow them, as Dr. Needleman's studies show, all the way until they perhaps drop out of high school.

Mr. **Waxman**. Now, Mr. Packer, in your statement, you are highly critical of EPA's failure to set up a stringent tap water standard for lead, and you know I am in agreement with you on that position.

The question we face now is: Where do we go from here?

Is it your view that we should move ahead and legislatively establish a new lead standard?

Mr. **Packer**. Absolutely. We testified here in 1988 and made that suggestion at that time, and, in fact, the original version of the Lead Contamination Control Act that you and Mr. Sikorski sponsored would have done that. It was dropped basically because EPA promised by the end of 1988 such a standard would be promulgated.

We commented to EPA in 1988 that we thought they should have such a standard. As you indicated, they are backing away from it, and the memo that you inserted in the record, which was also in the 1988 hearing record, Mr. Jenson mentioned in this internal memorandum that setting an MCL for lead at the lowest feasible level is justifiable as a more conservative measure.

So we think that their own data, their own comments from 3 years ago, certainly justify that, and since they failed to do that, we would strongly support legislation to mandate that.

Mr. **Waxman**. Ms. Rafel, you agree with that, I assume?

Ms. **Rafel**. Yes.

Mr. **Waxman**. That we should establish——

Ms. **Rafel**. Very much so.

Mr. **Waxman** [continuing]. Our own legislative standard for lead. Dr. Silbergeld?

Ms. **Silbergeld**. I would like to alert the Congress to a similar process of confused reasoning that is about to be established at EPA with respect to the ambient air standard for lead.

As you are aware, that standard is even more delayed in that as of 1982, the Agency was under statutory obligation of the old Clean Air Act to revise its national ambient air quality standard for lead.

After an exhaustive and quite elegant review of the data and a criteria document published 6 years ago, the Agency has still not come out with a revised air standard for lead. And there is within the Agency now, I must report to you, similar suggestions that we don't actually need an enforceable air standard for lead, that we can approach it by some of these other mysterious mechanisms that I frankly couldn't understand in this morning's testimony.

So I hope that you will extend your oversight into that arena as well.

Mr. WAXMAN. Thank you.

We are now ready for our last panel. Please proceed.

STATEMENTS OF KAREN FLORINI, SENIOR ATTORNEY, ENVIRONMENTAL DEFENSE FUND; MARK SILBERGELD, DIRECTOR, CONSUMERS UNION; KNUT RINGEN, EXECUTIVE DIRECTOR, LABORERS' HEALTH AND SAFETY FUND OF NORTH AMERICA; EDWARD J. GORMAN III, ASSOCIATE GENERAL COUNSEL, UNITED BROTHERHOOD OF CARPENTERS AND JOINERS OF AMERICA; JAMES S. WICKSER, ASSISTANT GENERAL MANAGER OF WATER, LOS ANGELES DEPARTMENT OF WATER AND POWER, ON BEHALF OF ASSOCIATION OF METROPOLITAN WATER AGENCIES; AND ERIK D. OLSON, COUNSEL, ENVIRONMENTAL QUALITY DIVISION, NATIONAL WILDLIFE FEDERATION

Ms. FLORINI. Thank you, Mr. Chairman.

My name is Karen Florini. I am senior attorney with the Environmental Defense Fund in Washington, D.C.

As a number of other witnesses have indicated, as we enter the last decade of the 20th century, we know a lot about lead. In particular, we know that it is toxic, cumulative, ubiquitous, and perpetual. These four troublesome characteristics combine to present a health hazard of unique severity.

Other witnesses having addressed lead's toxicity, cumulative, and ubiquitousness, I will merely stress that because lead is an element that is not subject to decay, its presence is perpetual. Put another way, lead has an infinite environmental half life and effect once it is extracted from native ore bodies.

Because lead processing is not a closed loop system, all uses of lead directly or indirectly contribute to some degree to further contamination of the environment, even if not during the lifetime of a product, then during mining, smelting, or product manufacture or upon product disposal.

On this last point, even the lead industry appears to agree. In testimony before another subcommittee of this committee last year, a representative of the Lead Industry Association objected to a provision of a pending bill that would have barred new uses of lead unless EPA determined that the new use would not have been likely to contribute to the dispersion of lead into the environment.

In doing so, LIA argued that such a requirement would effectively ban all new uses of lead. While I do not agree with that interpretation of the proposed legislative language, I do agree that all uses of lead inherently involve some degree of dispersion of lead into the environment given current mining, smelting, manufacturing, and disposal technologies.

What emerges from this constellation of characteristics, Mr. Chairman, is an intellectable need for fundamental change in our social attitude toward lead; what might be termed a social alchemy of lead.

In saying this, I am not referring to a physical transmutation of this element but, rather, a change in our attitude toward it, so that we cease using lead wherever what is needed is something that is heavy and cheap and, instead, use it only where its unique physical and chemical properties make it uniquely suited to the task at hand, and what is more, it must be able to be retrieved from the human environment and the environment at large once that task is completed.

At the same time, as many other witnesses have already indicated, we must recognize that we are facing a legacy of widespread dispersion of lead through our environment that we would all be better off without, the main culprits being dust contaminated with lead, paint and gasoline, and drinking water.

I concur with Don Ryan that the highest intensity exposures now being experienced in our population are associated with the deteriorating paint. At the same time, for the much larger group of other people who suffer from somewhat less high-intensity exposures, the primary culprits are more likely to be drinking water and dust exposure associated with gasoline.

Mr. Chairman, the United States continues to use well over a million metric tons of lead in commerce every year. That is a scant 2 percent less than we use in 1970. As I have already indicated, the lifecycle effects of lead are such that these are contributing to lead levels increasing in our environment.

Regrettably, current and planned Federal initiatives are seriously inadequate for addressing either existing or ongoing sources of lead.

Although the recent studies that have been spoken of this morning have laid a solid framework for further action, they all beg the most critical question. Where are the resources to come from to implement those plans?

State and local lead-abatement and treatment programs are desperately strapped for funds. Current Federal moneys are the merest drop in the bucket, and critical aspects of infrastructure development do not seem to be proceeding on a timely basis.

Regulatory efforts are likewise falling short of the mark. This is true not only for drinking water but, as Dr. Silbergeld has indicated, for the ambient air criteria standard and also FDA and OSHA efforts. New initiatives on the legislative level are plainly needed.

Mr. Chairman, the record of the Federal Agencies indicates that, if Congress wants something done, you need to do it yourselves, through laws that directly establish default standards and other provisions that take effect automatically if Federal Agencies fail to act in a timely fashion.

In particular, we recommend that this subcommittee focus on the following; for lead and dust hazards, to develop measure requiring disclosure of known or probable presence of lead, both in paint and in plumbing fixtures in the home, as homes are bought, sold, and rented.

Over time, such informational requirements will first help inform individual members of the public as they acquire homes that may be a problem and then reinforce general public awareness of lead hazards.

We also recommend that you provide clear mandates and schedules for Federal Agencies to complete and distribute informational materials and infrastructure components such as training and certification programs for abatement workers and contractors.

Just to very quickly mention, in addition, we do concur that you should enact legislation with respect to drinking water and reauthorize the screening programs under the Lead Contamination Control Act.

Thank you.

[Testimony resumes on p. 231.]

[The prepared statement of Ms. Florini follows:]

TESTIMONY OF

KAREN FLORINI
SENIOR ATTORNEY
ENVIRONMENTAL DEFENSE FUND

Mr. Chairman, thank you for this opportunity to testify about lead exposure in the context of the indoor environment. I am Karen Florini, Senior Attorney and Chair of the Environmental Defense Fund's Toxics Program in Washington, DC. For over two decades, EDF has worked to minimize human exposures to toxic substances, with special attention to lead.

As we enter the last decade of the 20th century, we know rather a lot about lead. We know that it is toxic even at low dose; we know that it is has a virtually indefinite half-life once released into the environment; we know that it is already ubiquitous in our society; and we know that all additional uses of lead contribute, either directly or indirectly, to further lead contamination of our environment.

As a result, what's needed now is development of a social alchemy of lead -- seeking not a literal transmutation of lead but rather a transformation of our society's attitude toward this toxic though useful material. Instead of using lead dispersively wherever there's a need for a material that is heavy and cheap, lead should be used only where its chemical and physical properties are uniquely suited to the task at hand. And we must also recognize that our society's prior uses of lead have left us a continuing legacy we'd all be better off without: widespread high-dose exposures that will require billions of dollars to curtail.

My testimony today will focus on four topics: first, the health effects of lead and why this substance warrants legislative attention; second, the major sources of lead exposure in the indoor environment; third, whether current and proposed federal programs are adequate to address existing problems; and finally, what additional steps need to be taken.

In brief, our views on these topics are as follows:

First, lead deserves special scrutiny because of a unique and tragic constellation of factors -- namely, lead's pervasiveness in the human environment combined with its toxicity, and particularly the potency of its neurotoxic effects on children. These two factors taken together mean that no other substance poses a greater environmental hazard for the nation's children. Over three million preschoolers -- almost one out of every six -- have lead levels high enough to cause measurable impairment of their neurologic abilities, including IQ and attention deficits and related problems even before they enter school. Now more than ever, as we move into the information age of the 21st century, the nation simply cannot afford to ignore this problem as we seek to ensure that children enter school ready and able to learn.

Second, there is no mystery about the major sources of lead in the indoor environment: the main culprits are dust and drinking water. Dust becomes contaminated with lead from the deterioration of lead-based paint -- some of which contained up to 50% lead by weight -- and from gasoline additives. Although gasoline was not used indoors, the minute lead particles that came out of the tailpipe settled out into roadside dust, which in turn are readily transported by wind through open windows or carried in on shoes or by pets.

And while the use of lead in paint and gasoline has been significantly reduced (though not eliminated), the millions of tons of lead previously used in those products has not gone away. Lead is an element. It cannot decay and its toxicity does not diminish through time.

In addition to paint and gasoline, other -- perhaps less obvious -- sources of lead contamination indoors must also be recognized. Children absorb high doses of lead primarily as lead-contaminated dust; the original form of the lead that winds up in the dust is essentially immaterial. Because the manufacture, use, and disposal of products containing lead disperses lead into the general environment -- and eventually into the indoor environment through deposition or tracking of lead-bearing dusts -- all stages of the life-cycle of all lead-containing products warrant review in this context. And the U.S. continues use well over a million tons of lead in commerce every year.

Third, current and planned federal initiatives are seriously inadequate for addressing either existing or ongoing sources of lead exposure. Although recent studies by federal agencies have laid a solid framework for future efforts on abatement and prevention, they beg the most critical question of all: namely, from whence will come the resources to translate these plans into action. State and local lead-poisoning programs are desperately strapped for funds, and current federal monies are the merest drop in the bucket. And critical aspects of infrastructure development -- such as issuance of training and certification programs for workers and contractors -- do not seem to be proceeding on a timely basis.

Moreover, related regulatory efforts also fall far short of the mark. Most conspicuous among these is EPA's egregiously belated promulgation of the revised standard for lead in drinking water. To add insult to injury, the Agency's most recent proposal would allow a decade-long compliance schedule for some water systems. Likewise, EPA's efforts to address other ongoing exposures have been halting at best.

Finally, for all these reasons, new initiatives are clearly needed -- to ensure that additional resources become available for abatement, education, screening, and prevention programs; to develop the infrastructure for abatement efforts; to set a timely and enforceable standard for protection of drinking water; and to take sensible actions to curtail unnecessary lead uses. Where agencies have proven themselves unwilling or unable to undertake these tasks with the tools now available, Congress must act. Otherwise, we must resign ourselves to having similar hearings again in the next century.

The remainder of this testimony addresses each of these topics at greater length.

1. Lead: Toxic, Persistent, and Ubiquitous -- Indoors and Out.

Lead is a remarkably powerful neurotoxin with profound long-term effects, especially in children. A study published last year in the prestigious *New England Journal of Medicine* demonstrates that children who had moderately elevated lead levels in early childhood later exhibited seven-fold increases in school drop-out rates, six-fold increases in reading disabilities, and lower final high school class standing. (Needleman et al. 1990.) These effects occurred even though the initial exposures caused no overt symptoms.

Lead's specific neurotoxic effects include impairments to IQ level, short-term memory, and reaction time; lead also impairs the ability to concentrate. The consequences of such impacts on children are profound, especially when viewed on a population-wide basis. Not only are lead-impaired children less able to achieve their own intellectual potential, but they also absorb disproportinately large amounts of teachers' time and attention. Thus, even a child whose lead exposure is virtually nonexistent suffers adverse effects, as his or her teacher's energy is shifted towards students whose lead exposure has caused them to be irritably more aggressive, more distractable, and less able to learn. And lead's toxic effects are not limited to children. In adults, low-level lead exposure has been associated with hypertension in men and pregnancy complications in women, including minor birth defects. Lead is also classified as a "probable human carcinogen" by the U.S. Environmental Protection Agency. (Attachment 1 to this testimony is a fuller summary of lead's toxicity, reprinted from EDF's recent report, *Legacy of Lead: America's Continuing Epidemic of Childhood Lead Poisoning* (March 1990).)

Lead's potency is compounded by its persistence in the human body. Once absorbed, lead is stored primarily in bone. To a lesser degree, storage also occurs in the kidneys and the brain, while a small portion remains in circulation in the blood. Lead's persistence in the body is virtually unequalled by any other toxin. Its "half life" -- the time it takes half of a given dose to be removed once absorbed -- exceeds twenty years. As a result, even small amounts of lead accumulate in the body, and can cause effects that endure long after exposure ends. Lead is now increasingly regarded as posing a "continuum of toxicity," in which the slightest exposure contributes to an adverse result somewhere in the body. Significantly, modern Americans face a total body burden of lead far in excess of that which humans evolved to cope with: our skeletons contain more than 200 times as much lead as those of our prehistoric ancestors. (EPA/ECAO, 1986, p. I-81.)

One reason that lead is an intractable toxin is because its effects, through severe, are not unique or obvious; it is not accompanied by readily observable signs such as those of chicken pox, for example. As a result, levels of lead in blood are generally used in identifying lead exposures of concern, expressed as micrograms of lead per deciliter of blood (ug/dl).

The Centers for Disease Control (CDC) of the U.S. Public Health Service has convened an expert committee to review the blood-lead levels associated with medically adverse outcomes, and other aspects of treatment and prevention of childhood lead poisoning. At its meeting earlier this week, the committee was expected to agree to the final language of a document establishing a multi-tier approach, including the following:

- 10 ug/dl as defining lead poisoning, with frequent re-testing of the child's blood level, and communities in which such children live undertaking lead-control programs where possible;
- 15 ug/dl as the level above which a child should be placed in individual case management; and
- 20 ug/dl as the level above which a child is placed in medical case management.

These new levels, based upon the most recent scientific information, contrast sharply with the 1985 CDC report, which set 25 ug/dl as the level defining lead toxicity.[1]

The problems of lead's toxicity and persistence are further compounded by the fact that lead is widely dispersed throughout our environment, and indeed our populace. EPA estimates that some 15% -- well over 3 million -- of the nation's children have blood-lead levels above 10 ug/dl.[2] (EPA, 1991, p. 1.)

These staggering numbers of lead-poisoned children are the legacy of decades of use of lead in residential paint, gasoline, plumbing fixtures, and myriad other products. In particular, the U.S. has the misfortune of suffering from a self-inflicted double whammy: no other nation used both leaded paint and leaded gasoline in such quantity for so long. Specifically, Americans used more gas -- and thus more lead -- than anyone else in the world during the decades in which gasoline had its highest lead concentrations. Indeed, the U.S. accounted for over 80% of the leaded gasoline sold prior to 1970. (Nriagu, 1990.) EPA estimates that total lead usage in gasoline exceeded 5 million tons as of 1986. (ATSDR, 1988, p. II-66 (data converted from metric to short tons).)

---

[1] This process continues a trend that has occurred repeatedly in recent years, during which additional information on lead toxicity has driven the threshold of concern steadily lower. And there is no guarantee that the process will end at 10 ug/dl. Indeed, as the National Academy of Sciences observed in 1980:

> "The hypothesis that people would be healthier in subtle ways if the average blood lead level were 1 - 2 ug/dl (or less) deserves sober consideration."

(National Academy of Sciences, 1980, p. 137.)

That hypothesis remains just as intriguing a decade later. Unfortunately, there is at present no way to test it, for virtually every person on the planet has a higher blood-lead level.

[2] This number is only an estimate, reflecting the woeful lack of screening currently conducted in the United States.

Because lead is an element, it cannot be degraded or transformed into some other material by natural processes. So the 5 million tons of lead from gasoline, along with a similar quantity of lead in from paint, together with lead drinking-water pipes and numerous other products is still in our environment: some of it in our landfills, but altogether too much of it in our homes, backyards, streets, playgrounds, and rivers, and in our bodies and those of our children. And even lead sequestered today in a landfill will outlast any containment system of human devising.

2. *Major Sources of Lead Exposure: Paint, Petrol, and Plumbing*

Any discussion of lead sources and exposures must start from the recognition that lead exposures are inherently cumulative both through time and among sources. Because of the extraordinary long half-life of lead in the body as discussed above, today's exposure is additive with that of last week, last month, last year, and indeed last decade. And, once lead is absorbed, the body makes no distinction between lead from various sources.

But, while no source of lead can be disregarded, the major sources of lead in the indoor environment are clear: dust contaminated with lead from paint and gasoline, and drinking water contaminated by lead pipes, solder, or fixtures. And of these, one source -- namely deteriorating lead-based paint -- is clearly responsible for the majority of high-dose exposures.

And while the paint/petrol/plumbing trio dominates indoor exposure sources, other sources cannot be ignored. Lead that is outdoors today may find its way indoors tomorrow. This is especially so for lead in particulate form that has been emitted from manufacturing operations or municipal incinerators, and subsequently deposited on soils and streets. (Indeed, this pathway explains why prior use of lead gas contributes today to contaminated dust indoors.)

Even products that do not cause exposure during their useful lifetimes contribute to environmental lead contamination at various points in their life-cycle through releases during mining or smelting of lead, through releases during manufacture of the product, or through releases following disposal or recycling. In this context, it bears noting that overall lead usage in this country has not changed substantially over the past two decades: U.S. lead consumption in 1989 was only about 2% lower than in 1970. (Bureau of Mines, 1975 & 1990.)[3]

Further, some ongoing uses of lead also directly contribute to lead in the indoor environment. In particular, brass plumbing fixtures may still legally be sold containing as much as 8% lead by weight. That lead may leach into drinking water, particularly if the water supply is corrosive. Recent data on the leaching of lead from crystal decanters demonstrates that lead is far more mobile from "inert" materials -- especially over the long term -- than had previously been recognized: when researchers tested beverages stored for extended periods in lead crystal decanters, they found that substantial quantities of lead had migrated into the beverages. (Graziano and Blum, 1991 (copy included as Attachment 2).)

Opportunities for migration of lead from brass plumbing fixtures are not merely hypothetical, as even manufacturers of such products have implicitly acknowledged. Attachment 3 is an enlargement of a label from a brass plumbing fixture purchased in California, where Proposition 65 mandates that manufactures inform consumers of exposures to lead (among other substances) above de minimus levels. Considering that substitute plumbing fixtures made out of stainless steel and plastic are widely available, continued use of leaded brass fixtures simply makes no sense.

---

[3] Moreover, the total amount of lead refined on global basis has been increasing in recent years: from 5.6 million metric tons in 1985 to 5.9 MMT in 1989. (Bureau of Mines, 1990.)

It must also be noted that, as a practical matter, further releases of lead to the environment will inevitably occur for years to come. This is because there are currently no substitutes for some crucial applications of lead, such as lead-acid batteries and radiation shielding. Battery manufacturing and recycling will continue to contribute lead to the environment, particularly as long as EPA persists in neglecting its responsibility to enforce existing (albeit inadequate) standards for smelters, as discussed below. And no recycling system will ever recapture all lead batteries. At present, although 80% to 95% of batteries are being recycled, the remainder contributes up to 138,000 tons of lead to the municipal waste stream and the general environment. (EPA, 1989, pp. 1 & 81 and Battery Council International data.)

Significantly, all of the primary lead smelters now in operation are reported to be in violation of existing occupational and environmental standards, as are many secondary (i.e., recycling) smelters.[4] (Bureau of Mines, 1988, pp. 9-12.) Astonishingly, EPA apparently intends to allow at least some smelters to remain out of compliance with the existing ambient air standard until mid-1997. (EPA, 1991, p. 30.) Meanwhile, that standard is itself undergoing revision, with many experts regarding the current standard as unprotective. For example, the Environmental Protection Agency's Clean Air Scientific Advisory Committee recently noted that the current standard provides "relatively little, if any, margin of safety." (EPA/SAB, 1990, p. 3.)

Similarly, occupational lead exposures are unacceptably high throughout major portions of the workforce. As a result, workers are at risk of the adverse health effects previously described. As noted in a recent editorial in the *American Journal of Public Health*,

> Present [occupational] standards are not protective. . . . Workers exposed to lead at levels below the current [standard] are suffering toxicity. * * * The continuing overexposure of American workers to lead and the persistent occurrence of occupational lead poisoning is a national scandal.

---

[4] An estimated 200,000 children under six lived within a three mile radius of primary and secondary smelters operating in 1985. (ATSDR, 1988, p. VI-28.)

(Landrigan, 1990.) That editorial accompanied a pair of articles describing the appalling degree to which occupational over-exposures to lead continue to be both commonplace and under-recorded. (Maizlish et al., 1990; Rudolph et al., 1990.)

So we start the last decade of the 20th century in an environment that has too much lead, with a populace that has too much lead, especially in the workforce, and most of all, with children who have too much lead. There is no margin of safety whatsoever. Rather, for large segments of our society, and perhaps for us all, the present reality is one of disease and dysfunction attributable to lead.

3. *The Inadequacy of Current and Planned Federal Responses.*

Regrettably, our society is marking only minimal progress in addressing lead exposures, whether in the context of indoor hazards from dust and drinking water or more generally. Because dust contaminated with high levels of lead from deteriorating lead-based paint poses the greatest risk of high-intensity exposure, the lack of progress in this area is particularly troubling.

--Paint and Dust Hazards

Abating deteriorating paint correctly is an expensive process, while doing it "on the cheap" often results in disastrous increases in lead-dust levels and concomitant exposures. Proper abatement entails numerous steps, including:

removing or permanently encapsulating deteriorating lead-based paint without creating unnecessary dust;

protecting abatement workers from lead exposure;

relocating residents during extensive abatement; and

ensuring that lead-bearing dust does not escape the site during abatement and is thoroughly cleaned up afterwards.

Low-income families generally lack the financial where-with-all to perform these tasks; indeed, even moderate- and upper-income families can find abatement expenses burdensome.[5]

In December 1990, the U.S. Department of Housing and Urban Development submitted a statutorily mandated Report to Congress with the promising title "A Comprehensive and Workable Plan for the Abatement of Lead-Based Paint in Privately Owned Housing." Although in many respects the document is an admirably thorough Report, it is notably deficient as a plan. The Report acknowledges the need to update abatement regulations, provide public information, conduct research on testing and abatement techniques, and build capacity in local abatement programs, yet makes few commitments to fulfill these needs within specific time frames.

Even more disturbingly, the Report fails to indicate where the resources will be found for abating the several million private low-income housing units with deteriorating lead-based paint. Data from the Report indicate that "priority" abatement needs in such housing will exceed $10 billion over the next decade.[6] But the Report's discussion of financial support for abatement in private housing simply catalogs existing housing-aid programs that are already severely underfunded even without incorporating aggressive lead-based paint abatement components. (HUD, 1990, p. 6-19.) One section is captioned "Additional Financial Assistance for Lead-Based Paint Abatement," but it merely cross-references the President's proposed 1992 budget, which in turn provided only a $25 million set-aside of monies from the HOME Program. At best, $25 million is a very small drop in a $10 billion bucket of need.

---

[5] While upper-income families may be less likely to encounter high dust levels typically associated with deteriorated paint in dilapidated housing, they can end up with comparable exposures as a result of renovation or remodeling older homes. Indeed, several reports of what has been termed "yuppie lead poisoning" have appeared recently in the medical literature. (E.g., Marino et al., 1990.)

[6] The $10 billion figure is derived by multiplying the low end of the range of abatement costs for "lead in paint and either lead dust or paint non-intact" in Table 4-10 of the Report (i.e., $21.9 billion) times the proportion of low to high incomes in Table 4-11 (i.e., 52%). This proportional figure is for households with children and would require adjustment for total households or for other income categories.

Many of the same criticisms apply to the Department of Health and Human Services' Strategic Plan for the Elimination of Childhood Lead Poisoning, released February 21, 1991. To be sure, the Plan's authors are to be highly commended for thoroughly and insightful assessing the steps needed in scaling up abatement efforts, blood-screening programs, and other aspects of a preventive approach to lead poisoning. But the HHS plan, like its HUD counterpart, fails to indicate where money for implementing the Plan is to be found. Rather, HHS makes a vague reference to a "shared commitment of the public and private sectors" (HHS, 1991, p. 45), and thus simply sidesteps the question.

In effect, it is as if these plans have given us a well-marked map of the nation's highway system. Unfortunately, there is no vehicle enabling us to put those roadways to their intended use. And until and unless such vehicles are found, the nation will make little progress in dealing with lead poisoning.

--Other Exposures

In addition to the urgent need to supply additional resources to curtail high-dose exposures from lead-based paint and dust, we need to reduce exposures from other sources as well. Two distinct topics require discussion -- first, lead in drinking water, and second, ongoing uses of lead in commerce.

Drinking Water--One of the most widespread sources of lead exposure for both children and adults is drinking water. Again, as with lead in paint, prior use of lead in plumbing systems is coming back to haunt us. Unfortunately, it appears that EPA lacks interest in serving as an effective exorcist.

The Safe Drinking Water Act Amendments of 1986 directed EPA to establish a revised drinking water standard for lead by June 19, 1989, superseding the 50 parts per billion level set in 1975 as an "interim" drinking water regulation. (See 23 Federal Register 31518 (Aug. 18, 1988).) Despite that statutory deadline, EPA in October 1990 issued an amended proposal would defer final compliance dates for up to an additional 9.5 years for medium-size systems. In addition, a "variance" would apparently be available even thereafter upon a showing that water is already "minimally corrosive" -- a term nowhere defined. (See 55

Federal Register 42410 (Oct. 19, 1990).) In other words, some consumers would continue to drink lead-contaminated water for at least the remainder of this millennium.

The leisurely compliance schedule suggested by EPA is neither necessary nor defensible. Congress mandated that final, enforceable standards be in place many months ago, not a decade hence. If EPA cannot establish a revised drinking water standard for lead on a timely, enforceable basis, Congress must.

Ongoing Uses of Lead--EPA's record on most other lead-exposure issues is similarly unimpressive.[7] Despite broad authority to control manufacturing, use and disposal of lead under the Toxic Substances Control Act of 1976 (TSCA) and the Resource Conservation and Recovery Act of 1976 (RCRA), the Agency has failed to do so. While the Agency's February 1991 "Strategy for Reducing Lead Exposures" serves as a useful mechanism for coordinating Agency activities, the document is severely flawed by its failure to recognize expressly that all lead uses directly or indirectly entail some lead releases at some point in a product's life-cycle. Also conspicuous by their absence are commitments to complete any of the regulatory initiatives outlined in the strategy by dates certain.

4. Future Directions

The preceding description of the problem suggests the broad outline of the solution. Put simply, we must stop making matters worse by indiscriminately adding further lead to our environment, and we must start making matters better by controlling in-place exposures that are either high-intensity -- notably dust hazards from deteriorating lead-based paint -- or that are widespread yet readily controllable -- notably lead in drinking water. We must also expand screening programs to allow us to identify lead-poisoned children as a first step both in treating them and in preventing their siblings and neighbors from sharing a similar fate. The latter requires national compilation and analysis of data.

In considering lead in the indoor environment, we recommend that this subcommittee give special attention to the following:

---

[7] The major exception is of course the reduction of lead levels in gasoline.

Paint and Dust Hazards:

- Develop measures requiring disclosure of the known or probable presence of lead in homes as they are bought and solid. Doing so will help new homeowners avoid an unwanted housewarming present -- lead poisoning -- when conducting repairs or remodeling either when first moving in or at some later date. Over time, such informational requirements will help first create, and then reinforce, public understanding of lead-dust hazards.

- Provide clear mandates and schedules for federal agencies to complete and distribute informational materials and infrastructure components such as training and certification programs for abatements workers and contractors.

- Support measures to make significant resources available for abatement of low-income housing units.

Drinking Water

- Set a default standard requiring compliance (measurable at the tap) within a specified period, though allowing EPA to change the standard through notice-and-comment rulemaking procedures based on subsequent scientific evidence.

- Ban the sale of plumbing fixtures containing intentionally added lead, such as those made from brass. Furthermore, because existing restrictions on use of lead solder in drinking water are of questionable effectiveness, retail sale of lead solders should be prohibited.

Screening

- Reauthorize and expand the highly successful program administered by the Centers for Disease Control pursuant to the Lead Contamination and Control Act.

Other

- Support measures to curtail unnecessary and dispersive uses of lead in commerce.

REFERENCES

(Copies or excerpts of items marked "*" are attached as appendices.)

ATSDR [Agency for Toxic Substances and Disease Registry] (1988), *The Nature and Extent of Childhood Lead Poisoning: A Report to Congress*, Atlanta: U.S. Department of Health and Human Services/Public Health Service, Doc. No. 99-2966.

Bureau of Mines (1990), Mineral Commodity Summaries (Lead Chapter), Washington, DC: U.S. Department of the Interior.

Bureau of Mines (1988), *Impact of Existing and Proposed Regulations on the Domestic Lead Industry*, Washington, DC: U.S. Department of the Interior, Doc. No. OFR/55-88.

Bureau of Mines (1975), Mineral Commodity Summaries (Lead Chapter), Washington, DC: U.S. Department of the Interior.

*Environmental Defense Fund (1990), *Legacy of Lead: America's Continuing Epidemic of Childhood Lead Poisoning*, Washington, DC: EDF (excerpt attached).

EPA (1991), "Strategy for Reducing Lead Exposures."

EPA/ECAO [U.S. Environmental Protection Agency/Environmental Criteria and Assessment Office] (1986), *Air Quality Criteria Document for Lead*, Research Triangle Park, NC: EPA/ECAO, Doc. No. EPA-600/8-83/028aF.

EPA/OPA [U.S. Environmental Protection Agency/Office of Policy Analysis] (1984), *Costs and Benefits of Reducing Lead in Gasoline*, Washington, DC: EPA.

EPA/OPTS [U.S. Environmental Protection Agency/Office of Pesticides and Toxic Substances] (1986), Pesticide Label Utility Project Report (April 11, 1986 draft).

EPA/OSWER [U.S. Environmental Protection Agency/Office of Solid Waste and Emergency Response] (1990), *Characterization of Municipal Solid Waste in the United States: 1990 Update*, Washington, DC: EPA, Doc. No. EPA/530-SW-90-042.

EPA/SAB [U.S. Environmental Protection Agency/Science Advisory Board] (1990), "Report of the Clean Air Scientific Advisory Committee: Review of the OAQPS Lead Staff Paper," Washington, DC: EPA, Doc. No. EPA-SAB-CASAC-90-002.

*Graziano, J., & Blum, C. (1991), "Lead Exposure from Lead Crystal," *Lancet*, Vol. 337, pp. 141-142.

HHS [U.S. Department of Health and Human Services] (1991), *Strategic Plan for the Elimination of Childhood Lead Poisoning*, Atlanta, GA: HHS Centers for Disease Control.

HUD [U.S. Department of Housing and Urban Development] (1990), *A Comprehensive and Workable Plan for the Abatement of Lead-Based Paint in Privately Owned Housing -- Report to Congress.* Washington, DC: HUD Officer of Policy Development and Research.

ICF, Inc. (1990), *Use and Substitutes Analysis for Lead and Cadmium Products in Municipal Solid Waste*, Fairfax, VA: ICF, Inc. (prepared under contract to EPA Office of Toxic Substances, Contract No. 68-D8-0116).

Landrigan, PJ (1990), "Lead in the Modern Workplace," *American Journal of Public Health*, Vol. 80, pp. 907-908.

Maizlish, N, L. Rudolph, et al. (1990), "Elevated Blood Lead in California Adults, 1987: Results of a Statewide Surveillance Program

Based on Laboratory Reports," *American Journal of Public Health*, Vol. 80, pp. 931-924.

Marino, P., Landrigan, P., et al (1990), "A Case Report of Lead Paint Poisoning durig Renovation of a Victorian Farmhouse," *American Journal of Public Health*, Vol. 80, pp. 1183-1185.

NAS [National Academy of Sciences/National Research Council] (1980), *Lead in the Human Environment*, Washington, DC: NAS.

Needleman, HL, et al. (1990), "The Long-Term Effects of Exposure to Low Doses of Lead in Childhood," New England Journal of Medicine, Vol. 322, pp. 83-88.

Nriagu (1990), "The Rise and Fall of Leaded Gasoline," *Science of the Total Environment*, Vol. 92, pp. 13-28.

Rudolph, L., DS Sharp, et al. (1990), "Environmental and Biological Monitoring for Lead Exposure in California Workplaces," *American Journal of Public Health*, Vol. 80, pp. 921-924.

PART I:
UNDERSTANDING THE PROBLEM

1. THE TOXICITY OF LEAD[1]

Lead's primary effect of concern is neurotoxic damage to fetuses and preschool children, for this effect occurs at levels of exposure that are commonplace in contemporary society. Low levels of lead exposure can also cause kidney damage and high blood pressure in adults.

Upon entering the body, lead makes its way into the blood stream; into soft body tissue, including the brain and kidneys; and into the "hard tissues," such as bone and teeth.[2] Blood-lead content is generally considered to be the most accurate measure of short-term lead exposure. The estimated half life of blood lead (i.e., the time required for one half of the lead to disappear) is 35 days.[3] While about 50 to 60 percent of the lead entering a person's body is eliminated fairly rapidly,[4] most of the remainder is stored in bone, where it stays for far longer periods. In fact, lead in bone has an estimated half life of about 20 years.[5]

Lead makes its way into the blood stream; into soft body tissue, including the brain and kidneys; and into the "hard tissues," such as bone and teeth.

Long thought to be inert, bone-based lead is now looked on as a double threat to the body. Bone is a living tissue that is itself sensitive to toxic assaults.[6] Many conditions, moreover, can rapidly release bone-based lead back into the blood stream. For example, pregnancy and osteoporosis, both of which cause demineralization of bone, have been associated with sharp rises in blood lead levels.[7] Indeed, lead moves from bone to other parts of the body readily enough that it may well be an "insidious source" of long term lead poisoning.[8]

---

[1] The documentation of lead's toxic effects is immense. Key sources include: Agency for Toxic Substances and Disease Registry (1988), The Nature and Extent of Lead Poisoning in Children in the United States: A Report to Congress (Atlanta: U.S. Dep't of Health and Human Services/Public Health Service), Doc. No. 99-2966, especially Chapters III and IV; U.S. Environmental Protection Agency (1986a), Air Quality Criteria Document for Lead, Vols. I through IV; Centers for Disease Control (1985), Preventing Lead Poisoning in Young Children, (Atlanta: Dept of Health and Human Services/ U.S. Public Health Service). Excellent review articles include HL Needleman (1988a), "Why We Should Worry About Lead Poisoning," Contemporary Pediatrics, pp. 34 - 56; JM Davis and DJ Svenegaard (1987), "Lead and Child Development," Nature, Vol. 329, pp. 299-300; HL Needleman (1988b), "The Persistent Threat of Lead: Medical and Sociological Issues," Current Problems in Pediatrics, Vol. XVIII, pp. 703-76; EK Silbergeld (1985), "Neurotoxicology of Lead," in K Blum and L Manzo (eds.), Neurotoxicology (Amsterdam: Dekker).

[2] MB Rabinowitz, GW Wetherill, and JD Kopple (1976), "Kinetic Analysis of Lead Metabolism in Healthy Humans," Journal of Clinical Investigation, Vol. 58, p. 260.

[3] Ibid.

[4] Agency for Toxic Substances and Disease Registry (1988), p. III-7.

[5] Rabinowitz et al. (1976).

[6] Agency for Toxic Substances and Disease Registry (1988), p. III-7.

An important aspect of lead's menace, therefore, is its *cumulative effect*. Even seemingly trivial exposures, if often repeated, can add up to doses that exert toxic effects.[9]

And virtually no part of the body is immune from lead. As one recent analysis put it, "At a sufficient level of lead exposure, virtually all body systems will be injured or have a high risk of injury."[10] While researchers have not yet discerned the exact biological mechanisms of lead toxicity, they have extensively documented its effects on a number of organ systems at the cellular level.

"At a sufficient level of lead exposure, virtually all body systems will be injured or have a high risk of injury."

The most important effects of lead involve disruption of energy metabolism at the cellular level and interference with neural cell function in the brain. Specifically, lead interferes with the formation of heme, the molecule that carries oxygen in all cells.[11] In the nervous system, lead has a unique ability to inhibit communication and slow motor nerve conduction velocity[12] -- the speed at which nerves process signals.[13]

Neurotoxic Effects: Lead's neurotoxic effects at relatively low exposure levels include decreased intelligence, short-term memory loss, reading and spelling under-achievement, impairment of visual-motor functioning, poor perceptual integration, poor classroom behavior, and impaired reaction time. Children and fetuses are especially susceptible to these effects, because their neurologic systems are rapidly developing.[14] Growing

---

[7] EK Silbergeld, J Schwartz, and KR Mahaffey (1988), "Lead and Osteoporosis: Mobilization of Lead from Bone in Menopausal Women," Environmental Research, Vol. 47, p. 79.

[8] Environmental Protection Agency (1986a), Vol. IV, p. 13-16.

[9] Centers for Disease Control (1985), p. 3.

[10] Agency for Toxic Substances and Disease Registry (1988), p. IV-3.

[11] Silbergeld (1985).

[12] Ibid.; see also, PJ Landrigan (1989), "Toxicity of Lead at Low Dose," British Journal of Industrial Medicine, Vol. 46, pp. 593-4.

[13] In addition to these effects of low-level lead exposure, effects of high-level exposures are also varied, and include anemia, brain damage, muscle palsy, kidney failure, headache and vomiting, convulsions, and death. These high-dose effects have been known for centuries. The first known clinical account of lead poisoning comes from the first century B.C., while Hippocrates offered unconfirmed descriptions two centuries earlier. See HA Waldron (1973), "Lead Poisoning in the Ancient World," Medical History, Vol. 17, pp. 391-99. In eighteenth century Massachusetts, lawmakers enacted one of the country's first public health statutes after recognizing the health effects of drinking "rum and other strong liquors" from leaded containers. See CP McCord (1953), "Lead and Lead Poisoning in Early America: Benjamin Franklin and Lead Poisoning," Industrial Medicine and Surgery, Vol. 22, p. 397.

[14] Centers for Disease Control (1985), p.1.

BEST COPY AVAILABLE

evidence indicates that the effects of lead poisoning occur before any overt symptoms appear and often constitute a serious health problem even in the absence of obvious symptoms.

Several key epidemiologic studies in recent years have compellingly demonstrated the range of lead's effects on a variety of populations.[16] Most of these studies are retrospective, meaning that researchers identify a group of children, determine their lead levels, and evaluate their current health status in an attempt to ascertain the effects of prior lead exposure. Although lead poisoning is often viewed as primarily a disease of the poor, wealth and social status confer no immunity. Indeed, a recent government study concluded that children living *above* the poverty level comprise the largest category of people in danger of undue exposure.[15]

A series of landmark studies on lead neurotoxicity have been conducted by Dr. Herbert Needleman of the University of Pittsburgh and his colleagues. The researchers collected baby teeth -- which, like bone, serve as long-term storage sites for lead -- from over 2300 first and second graders in two suburban Boston school districts. They then categorized the children according to dentine (tooth) lead levels [17], and identified two groups for further study: a low-lead group of 100 children who had extremely low levels and a high-lead group 58 children who had relatively high levels but who had no symptoms of overt lead poisoning.[18] Those 158 children were then evaluated using an array of standardized and some nonstandardized neuropsychological tests.

Although lead poisoning is often viewed as primarily a disease of the poor, wealth and social status confer no immunity. Indeed, a recent government study concluded that children living *above* the poverty level comprise the largest category of people in danger of undue exposure.

When the results were controlled for 39 other factors (such as socioeconomic status, family size, and mother's IQ), children in the high-lead group had a median IQ deficit of six points compared to their low-lead classmates, as well as shorter attention spans and imperied language skills. Even more striking was the effect on the overall distribution on IQ scores: the children in the higher-lead group were almost four times as likely to have an IQ below 80, while none of them scored above 125.[19]

Also striking were the results of evaluations by the children's teachers (who did not know their pupils' lead status). Using an 11-item scale that examined classroom behavior, attention, and overall functioning, teachers concluded that children with elevated lead levels scored significantly worse than the low-lead group.

Five years later, the researchers re-examined these two groups of children.[20] The high-lead group had lower IQ scores, needed more special academic services, and had a higher rate of school failure. Eleven years after the initial study, a second follow-up was conducted, to determine whether lead's effects persist into young adulthood.[22] The findings were dramatic: compared to the lower-lead classmates, the higher-lead group showed a 7.4 increase in school dropout rates, and a 5.8 increase in reading disabilities (defined by scoring two or more grade levels below that expected for the highest grade completed). The higher-lead group also exhibited lower class rank and higher absenteeism.

---

[15] Agency for Toxic Substances and Disease Registry (1988), p. I-48.

[16] For an outline of epidemiological considerations, see sidebar below and Needleman (1990b), p. 677.

[17] The high lead group had dentine levels above 24 parts per million (ppm); the low-lead group had dentine levels below 6 ppm.

[18] These 158 children were a subset of the 270 children with levels above 24 or below 6. Others were excluded to avoid possible confounding factors such as head injuries, acute lead poisoning, and variable lead levels in different teeth.

[19] Needleman (1988a).

[20] Bellinger, D, HL Needleman, R Bromfield, and M Mintz (1984), "A Follow-up Study of the Academic Attainment and Classroom Behavior of

Other researchers have also found effects in epidemiological studies on lead-exposed children, though some have conducted similar studies and reported no effects. All studies published since 1972 were recently evaluated using meta-analysis, a technique that allows investigators to pool data across studies and to draw conclusions as to the statistical reliability of the data taken collectively.[23]

After eliminating studies that failed to meet key criteria such as adequate sample size, exclusion of acutely poisoned children, and controls for socioeconomic factors, data from the remaining twelve studies were pooled. The outcome strongly supports a linkage between low-dose lead exposure and intellectual deficits in children.

Further evidence of lead's neurotoxicity comes from a series of prospective studies, in which investigators measure variables over an extended period of time into the future. Recent studies have found notable effects from prenatal lead exposures at very low levels.[24] In fact, one study found effects from prenatal exposures as low as 6 to 7 ug/dL.[25]

For example, in a study of several hundred children whose prenatal lead exposure had been determined from umbilical cord blood samples at the time of birth, investigators found that even moderate lead levels affected the

THE IMPORTANCE OF SMALL NUMBERS

Figure 1 shows the frequency distribution of IQ scores between the "low lead" and "high lead" children, and indicates that high blood lead levels are associated with a left-ward shift in the overall IQ distribution curve. In addition to showing that the median IQ deficit is 6 points, these data also illustrate two other key points: (1) High lead children in this case were almost *four times as likely to have IQs of less than 80; and (2) five percent of the low lead group had IQs of more than 125, while none of the high lead group did.*[21]

In other words, lead's effect on a population as a whole is more dramatic than its effects on individuals, by affecting the frequency of high and low scores. The disadvantaged are further harmed, while the truly gifted are deprived of their potential.

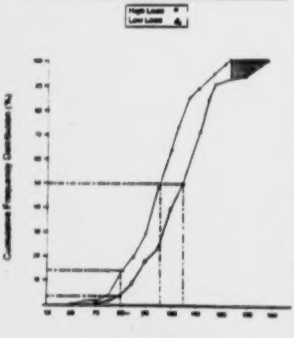


FIGURE 1
DISTRIBUTION OF IQ SCORES

Children with Elevated Dentine Lead Levels," Biological Trace Elements Research, Vol. 6, pp. 207-223.

[21] Diagram adapted from HL Needleman (1988a).

[22] HL Needleman, et al. (1990a), "The Long-Term Effects of Exposure to Low Doses of Lead in Childhood," New England Journal of Medicine Vol. 322, pp. 83-88. Researchers were able to trace and evaluate about half of the original participants. The others could not be located or refused to participate. The group that was retested tended to have lower dentine levels, higher IQs, and better school behavior reports. As a result, it seems likely that the 11-year follow-up may underestimate lead's long-term effects, since a higher percentage of the most severely affected individuals did not participate.

[23] HL Needleman, CA Gatsonis (1990b), "Low Level Lead Exposure and the IQ of Children," Journal of the American Medical Association, Vol. 263, pp. 673-678.

[24] For detailed discussion of these studies, see Agency for Toxic Substances and Disease Registry (1988), pp. IV-6 to IV-13.

[25] Bellinger, D, A Leviton, C Waternaux, HL Needleman, and M Rabinowitz (1989),"Low-level Lead Exposure, Social Class, and Infant Development," Neurotoxicology and Teratology, Vol. 10, pp 497-503.

children's performance on mental-development tests up to two years later.[26] Similar outcomes have been found in studies in Port Pirie, Australia and Cincinnati, Ohio.[27] In the words of the American Academy of Pediatrics, the available data have "shown conclusively" that reduction in intelligence and alteration in behavior occur in children with elevated blood lead levels.[28]

In addition to these extremely disturbing findings on the consequences of lead exposure in children and fetuses, a growing body of research is showing that low levels of lead also exert toxic effects on adults, including cancer, reproductive effects, and high blood pressure.

Cancer: The U.S. Environmental Protection Agency has classified lead as a "probable human carcinogen," based on data from animal studies.[29] Recently, EPA's Science Advisory Board, which is comprised of outside experts from industry and academia, formally reviewed EPA's classification and endorsed it.[30] Researchers are currently comparing lead's potency as a carcinogen to its potency as a neurotoxin.[31]

Reproductive Effects: Experiments on laboratory animals give ample evidence of lead's toxic effects on the reproductive system (e.g., failure of ovulation, delayed sexual maturity, impotence, sterility, spontaneous abortions).[32] While there are fewer data on the reproductive effects in humans, there are numerous reports of an increase in spontaneous abortions, structurally abnormal sperm, and decreased fertility in lead-poisoned adults.[33]

Effects on Blood Pressure: An additional threat to adult males is indicated by evidence showing a link between low-level lead exposure and

DETERMINING CAUSE AND EFFECT THROUGH EPIDEMIOLOGICAL STUDIES

In epidemiological studies, groups of people are studied in order to determine patterns of disease. Those patterns are then analyzed statistically in order to reveal links between a particular substance and certain health effects.

Scientists attempting to show cause and effect through epidemiological studies use five rules of thumb that, taken together, serve as a rigorous test of causality. These are:

1. Order of precedence. The "cause" must precede the "effect."

2. Consistency. There must be broad consistency among data both internally, and among different studies.

3. Dose-response. Causality can be more strongly inferred when variations in the "cause" are associated with variations in the "effect."

4. Specificity. If the same effect can be produced by other means, the cause-effect relationship under scrutiny is weakened. If the effect can be produced only by the cause, the relationship is strengthened.

5. Biological plausibility. Put simply, this test asks whether, in light of current knowledge of human biology, the cause/effect relationship seem likely.

All five criteria are met for studies on the neurotoxicity of lead.

---

[26] D Bellinger, A Leviton, C Watermaux, HL Needleman, and M Rabinowitz (1987), "Longitudinal Analyses of Prenatal and Postnatal Lead Exposure and Early Cognitive Development, New England Journal of Medicine, Vol. 316, pp. 1037, 1039.

[27] AJ McMichael, PA Baghurst, NR Wigg, GV Vimpai, EF Robertson, RJ Roberts (1988), "Port Pirie Cohort Study: Environmental Exposure to Lead and Children's Abilities at the Age of Four Years," New England Journal of Medicine, Vol. 319, pp. 468-75; KN Dietrich, KM Krafft, RL Bornschein (1987), "Low Level Fetal Exposure Effect on Neurobehavioral Development in Early Infancy," Pediatrics, Vol. 5, pp. 721-30.

[28] American Academy of Pediatrics (1987), "Statement on Childhood Lead Poisoning," Pediatrics, Vol. 79, pp. 457.

[29] See 50 Fed. Reg. 46936 (Nov. 13, 1985).

[30] Environmental Protection Agency, Scientific Advisory Board (December 1989), "Report of the Joint Study Group on Lead: Review of LEad Carcinogenicity and EPA Scientific Policy on Lead," (Doc. No. EPA-SAB-EHC-90-001), p. 1.

[31] Research underway at University of Maryland, Program in Toxicology.

[32] HL Needleman and PJ Landrigan (1981), "The Health Effects of Low Level Exposure to Lead," Annual Review of Public Health, Vol. 1981, pp. 277-98.

[33] Ibid.

high blood pressure.[34] Although differences between blood-pressure values were relatively small, the effect nonetheless is of concern from a public health perspective. Like lead's effects on IQ distribution, the consequences of even a small shift in the distribution curve for blood pressures can be severe on a population-wide basis. Given the role of cardiovascular disease as the number one cause of death in America, even "small" increases in average blood pressure are of significant concern.

Given the role of cardiovascular disease as the number one cause of death in America, even "small" increases in average blood pressure are of significant concern.

---

[34] In a statistical analysis based on a national health survey of 9,932 persons of all ages, one researcher found a "robust relationship between low-level lead exposure and blood pressure" in adult males. J Schwartz (1988), "The Relationship Between Blood Lead and Blood Pressure in the NHANES II Survey," Environmental Health Perspectives, Vol. 78, pp. 15-22. A reanalysis of the same data for males between the ages of 12 and 74, using a different and rather conservative statistical technique, also found a significant linear association between blood lead levels and blood pressures. JR Landis and KM Flegal (1988), "A Generalized Mantel-Haenszel Analysis of the Regression of Blood Pressure on Blood Lead Using NHANES II Data," Environmental Health Perspectives, Vol. 78, pp. 35-42. While the actual differences in blood pressure in these and other studies are small, the consistency across studies is strong. W Victery, HA Tyroler, R Volpe, and LD Grant (1988), "Summary of Discussion Sessions: Symposium on Lead-Blood Pressure Relationships," in U.S. Department of Health and Human Services, Environmental Health Perspectives, Vol. 78, pp. 139-155.

Lead exposure from lead crystal

JOSEPH H. GRAZIANO CONRAD BLUM

In a study of the elution of lead (Pb) from crystal decanters and glasses, port containing 89 µg Pb/l was placed in decanters and the Pb content of the wine rose steadily to 3518 µg/l after 4 months. Wines and spirits stored in crystal decanters for a long time contained Pb at concentrations up to 21 530 µg/l. In a short-term experiment white wine eluted small amounts of Pb from crystal glasses within minutes.

Lancet 1991; 337: 141–42.

Historically, lead (Pb) accidentally found its way into wines in many ways, and wines to which lead salts were added as a sweetener may have contained as much as 20–30 mg/l of this toxic metal.[1,2] Lead crystal, a form of glass with high concentrations of Pb, was invented three centuries ago. The addition of Pb compounds to molten quartz yields a glass with high density and durability and a special brilliance. By the early 19th century severe occupational Pb intoxication was described in glassworkers in Paris.[3] In the United States the production of lead crystal did not develop until the late 19th century. Lead crystal vessels now contain 24–32% lead oxide (PbO), and we wondered if crystal decanters and glasses could be a source of Pb exposure for adults drinking from them.

Our laboratory, which is certified by the US Occupational Safety and Health Administration for blood Pb analysis, tested wines and spirits for Pb content by graphite furnace atomic absorptiometry.[4] Three crystal decanters were studied. The contents of a bottle of port

Attachment 2

was cleaned, opened, and, after duplicate 5 ml samples had been taken for Pb analysis, the remaining wine was divided among the three vessels. 5 ml samples were removed after 2, 7, 31, 84, and 127 days. Colleagues were asked if their homes contained crystal decanters that had held fortified wine or spirits for a long time. The contents of eleven decanters were provided and 5 ml samples were taken for measurement of Pb.

In a further experiment we used four sets of four glasses: (a) unleaded controls, (b) and (c) lead crystal glasses containing 32% PbO and 24% PbO, respectively, and (d) crystal glasses of unknown PbO content. The presence or absence of Pb was confirmed by X-ray fluorescence on a *Princeton Gamma-Tech XK-3* lead-in-paint analyser, kindly provided by the New York City Bureau of Lead Poisoning Control. All glasses, glassware, and pipette tips were pre-washed with 0·5% pure nitric acid. 60 ml California white wine was poured into each glass and 1 ml samples were removed periodically for up to 4 hours.

The port contained Pb 89 µg/l when it was put into the decanters. After about four months Pb concentrations were 5331, 3061, and 2162 µg/l in decanters of PbO content 32%, 32%, and 24%, respectively. Six beverages from decanters in the homes of colleagues had very high Pb concentrations (1·4–21·5 mg/l). Spirits stored in antique decanters in a fifth home contained very little Pb, and these decanters may have pre-dated the addition of Pb to crystal in the US:

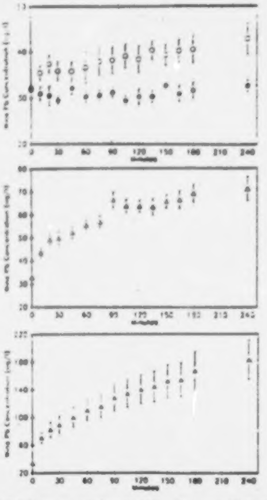
Beverage	*Approx storage*	*Pb conc (µg/l)*	*Beverage*	*Approx storage*	*Pb conc (µg/l)*
Brandy	5 yr	7746	Brandy	5 yr	8390
Madeira	5 yr	1402	Gin	6–12	13*
Whisky	> 3 yr	2587	Brandy	> 1 yr	68*
Port	6–12 mo	203	Grand Marnier	> 2 yr	173*
Armagnac	6–12 mo	203	Bourbon	18 mo	17*
Brandy	> 5 yr	19 920	Tequila	18 mo	300*
Brandy	> 5 yr	21 530	Vodka	1 yr	11*

*Antique, possibly pre-dating lead crystal use in North America.

Pb concentrations did not rise in wine poured into non-Pb glasses but there was a significant rise in Pb over time in the other wine samples (figure). Analysis of variance indicated that each set of glasses and indeed each individual glass within a set had its own characteristic elution pattern. The mean (SE) Pb concentration of wine in the twelve lead crystal glasses rose from 33 µg/l at the time of pouring, to 68 (11), 81 (15), 92 (18), and 99 (20) µg/l after 1, 2, 3, and 4 h, respectively.

The US Environmental Protection Agency maximum allowable level for Pb in drinking water is 50 µg/l though this is likely to be revised to a more stringent 20 µg/l or less.[5] The Pb concentration of wine is 30–200 µg/l, and Elias[2] concluded that wine is not an important source of Pb exposure except for those who drink a lot of it.

Our findings show that alcoholic beverages stored in crystal decanters steadily increase in Pb concentration over time and that spirits kept in decanters for a long time may achieve Pb concentrations comparable with those in the notorious sweetened wines of Roman times.[1] Infrequent drinking from such a decanter would result in rare but large doses of Pb; frequent drinking would result in repeated smaller doses. Our experiments with wine glasses indicate that Pb begins to elute from crystal within minutes. The concentrations were far less than those observed in spirits stored in decanters but the use of both lead crystal glasses and decanters should be reviewed. DeLacey[6] reported that Pb concentrations in port rose from 21 to 1233 µg/l after three months in a crystal decanter, an observation consistent with ours. However, he claimed that concentrations reached a plateau after 6–8 weeks of storage and also that wine Pb did not rise during a 3 h incubation in crystal glasses. The data to support the latter conclusions were not presented, nor were the analytical methods, which, for short-term incubation, may have been too insensitive to detect the small rise in Pb concentration over time.



Mean (SE) Pb concentrations in white wine poured into glasses.

● = non-Pb glasses (controls); ○ = Irish, △ = French and ▲ = Yugoslavian Pb crystal glasses. (Note different scales on y axes.)

The adverse effects of Pb—gout, hypertension, renal changes, altered erythropoiesis, nervous-system disorders, and deficits in cognitive function after in utero exposure—are well known. The contribution of crystal glass to these adverse health outcomes is unknown, but deserves study.

REFERENCES

1. Nriagu JO. Historical perspectives on the contamination of food and beverages with lead. In: Mahaffey KR, ed. Dietary and environmental lead: human health effects. *New York: Elsevier*, 1985: 1–41.
2. Elias RW. Lead exposures in the human environment. In: Mahaffey KR, ed. Dietary and environmental lead: human health effects. *New York: Elsevier*, 1985: 79–107.
3. Tanquerel des Planches L. Lead diseases: a treatise, with notes and additions on the use of lead pipe and its substitutes (translated by S L Dana). Lowell, Mass: Daniel Bixby, 1848: 37–63.
4. Fernandez F, Hilligoss D. An improved graphite furnace method for the determination of lead in blood using matrix modification and the L'vov platform. *Atomic Spectr* 1982; 3: 130–31.
5. Agency for Toxic Substances and Disease Registry. The nature and extent of lead poisoning in children in the United States: a report to Congress. Atlanta: US Public Health Service, 1988: I-20–I-39.
6. DeLacey EA. Lead-crystal decanters: a health risk? *Med J Aust* 1987; 147: 622.

ADDRESSES: Departments of Pharmacology and Pediatrics (Prof J. H. Graziano, PhD) and Department of Medicine (C. Blum, MD), Columbia University College of Physicians & Surgeons, New York, NY 10032, USA. Correspondence to Prof J. H. Graziano.

BEST COPY AVAILABLE

PEERLESS
TOTAL
FAUCET AND FINISH LIMITED
WARRANTY
FOR AS LONG AS YOU OWN YOUR HOME

WRITE PURCHASED MODEL NUMBER HERE FOR FUTURE REFERENCE.

© 1989, Masco Corporation of Indiana

WARRANTY SUPPLEMENT SHEET

PEERLESS® FAUCET AND FINISH LIMITED WARRANTY

All parts and finishes of the Peerless Faucet are warranted to the original consumer purchaser to be free from defects in material and workmanship for as long as the consumer owns their home.

Peerless will replace, FREE OF CHARGE, during the warranty period, any part or finish which proves defective in material and/or workmanship under normal installation, use, and service. Replacement parts can be obtained from your local dealer or from our factory. THIS WARRANTY IS LIMITED TO DEFECTIVE PARTS OR FINISH REPLACEMENT ONLY. LABOR CHARGES AND/OR DAMAGE INCURRED IN INSTALLATION, REPAIR, OR REPLACEMENT AS WELL AS INCIDENTAL AND CONSEQUENTIAL DAMAGES CONNECTED THEREWITH ARE EXCLUDED. PROOF OF PURCHASE (original sales receipt) MUST ACCOMPANY ALL WARRANTY CLAIMS. THIS WARRANTY IS THE ONLY *EXPRESS WARRANTY MADE BY PEERLESS. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS LIMITED IN DURATION TO THE DURATION OF THIS EXPRESS WARRANTY.*

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

Any damage to this faucet as a result of misuse, abuse, neglect, accident, improper installation, or any use violative of instructions furnished by us, WILL VOID THE WARRANTY.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Rev. 10-89

16861-A

CONSUMER WARNING

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Most materials used in plumbing products contain small quantities of various chemicals known or suspected to cause birth defects, other reproductive harm or cancer. Specifically, lead is present in this and other brass faucets, brass plumbing fittings and in much of the solder used to hold copper pipes together. Other listed chemicals are found in rubber and plastic compounds used in faucets, fittings and tubings. You may be exposed to minute quantities of such chemicals through the normal use of your plumbing system. Hot water accelerates the dissolving of such chemicals from brass, as well as from rubber and plastic components. Moreover, the water which is held for several hours by a closed faucet may dissolve chemicals out of the faucet and the rest of the plumbing system, particularly where the water is corrosive.

You can greatly reduce unnecessary exposure to chemicals from faucets and nearby plumbing by taking the following steps:

1) Never drink the first glass of water out of the tap when the water has been standing unused for several hours, during the day or overnight. Run the faucet for a few seconds to "flush" it and nearby plumbing components, or for no more than 30 seconds to "flush" the average home of standing water to building service water line.

2) Avoid drinking or cooking with water drawn from the hot water side of the tap.

3) Should you wish to have your water tested, there are many private laboratories certified by the U.S. EPA, or your states EPA, that can do such testing.

BEST COPY AVAILABLE

Mr. **Waxman**. Thank you very much.

Mr. Silbergeld.

STATEMENT OF MARK SILBERGELD

Mr. **Silbergeld**. Thank you, Mr. Chairman.

I am not even going to summarize my testimony except for to expand on a single point. It's there for the record.

We agree with all of the nongovernmental witnesses who have testified so far today, and I would also associate myself with the remarks of Dr. Houk.

However, I would like to focus and expand on a single point that we make in our testimony, and that is that the biggest problem in solving the lead-poisoning problem in the United States of America is political will.

The science can be understood even though there is more science to do. The programs can be pretty well outlined even though details need to be worked out. The problem is political leadership.

The President of the United States says that he wants to be the education President, and he has recently generated a lot of discussion about how education should be financed and what should be taught but to whom? To students, to pupils, to children, it is estimated, one-sixth of whom are IQ-impaired, learning-impaired, or have short attention spans. Why? Lead poisoning.

The President also says that he wants to be the environmental President, and lead poisoning is an environmental problem. You would think that, under these circumstances, the logical thing to do would be for the President to call his subordinates in and say I am the education President, I am the environmental President, get the lead out.

Instead, we find that, for the most part, with the laudable exception of CDC, they have lead in their shoes and lead in their collective gluteus maximas, and HUD cannot get the lead paint out of housing, and EPA cannot get the lead out of drinking water, and HCFA cannot deliver screening programs.

It is clear, Mr. Chairman, therefore, that we cannot look to the Executive Branch for the political leadership that is necessary to make the reduction of lead poisoning a high national priority and to get the job done.

Therefore, we believe, the Congress must take the lead. This hearing has identified most of the problems that exist. Consumers Union does endorse a unified approach addressing all present and future uses of lead.

We believe that the Reed-Lieberman and now, I understand, Scheuer bill is a good catalog of where to start. It is clear from this hearing this morning that some additional problems have been identified, which the chairman has focused on, in great part, with the witnesses we have heard today, and that that bill should be a starting place from which improvements need to be made.

We would look forward to working with the subcommittee to get the job done, but it has got to come from the Congress. It will not come from the administration.

Thank you, Mr. Chairman.

[Testimony resumes on p. 245.]

[The prepared statement of Mr. Silbergeld follows:]

TESTIMONY OF MARK SILBERGELD
Director, Washington Office
CONSUMERS UNION

Mr. Chairman, Consumers Union[1] appreciates the Subcommittee's invitation to testify on this important issue. Childhood lead poisoning is the nation's number one preventable disease of environmental origin. And the indoor environment is the single largest source of exposure to lead for most Americans who do not work in, or live in the immediate vicinity of, lead-related industries. Many of us, of all ethnic origins and economic conditions[2], are exposed to lead paint in older homes and to lead in drinking water from the public water supply. We commend the Chairman and the Subcommittee for holding this hearing on the issue of indoor lead exposure. Today I would like to help establish a strong record as to why the Congress should enact legislation to reduce to the bare minimum human exposure to lead from all sources.

---

[1] Consumers Union is a nonprofit membership organization, chartered in 1936 under the laws of the State of New York to provide information, education and counsel about consumer goods and services and the management of family income. Consumers Union's income is derived solely from the sale of Consumer Reports and its other publications and from member donations. Expenses of occasional public service efforts may be met, in part, by nonrestrictive, noncommercial grants and fees. In addition to reports on Consumers Union's own product testing, Consumer Reports, with approximately 4.9 million circulation, regularly carries articles on health, product safety, market- place economics and regulatory actions which affect consumer welfare. Beginning with the first issue of Consumer Reports in 1936, Consumers Union has reported on hazards of lead exposure from various sources on numerous occasions. Consumers Union's publications carry no advertising and receive no commercial support.

[2] There is a widespread misperception that lead poisoning is solely a disease of economically-disadvantaged inner-city dwellers. Senator Richard Bryan of Nevada, a primary co-sponsor of a comprehensive Senate bill to eliminate lead poisoning, points out that his own daughter, in an advanced stage of pregnancy, was lead poisoned when she and her husband removed old paint while fixing up their house. Serious health concerns resulted and the couple had to vacate the house and undertake an expensive clean-up of the residues of lead paint dust from their renovation activities. While it is true that lead poisoning disproportionately affects the urban poor, it is a health issue for all Americans.

THE NEED FOR A COMPREHENSIVE APPROACH

We do want to be clear that Consumers Union supports a comprehensive approach to the removal of lead from the environment. Last year, we endorsed in principle bills in both Houses of Congress that would have reduced to a minimum all unnecessary uses of lead, regulated all new uses of lead, created strong incentives for the safe recovery and use of recycled lead in place of newly-mined lead for necessary uses, enhanced existing lead poisoning screening and health care programs and programs for detection and removal of lead paint from the home environment, among other measures. And we have again endorsed in principle the current Senate bill, which takes that approach. That comprehensive approach is important. As some predicted, the sigh of relief breathed when the use of lead in automotive fuel was greatly reduced was only relative. Despite the reduction of gasoline as a source of lead, lead poisoning remains prevalent. We have gotten out of the syndrome of refiners blaming lead poisoning on lead paint while paint manufacturers and landlords blame it on leaded gasoline. But we should not invent a new version of the syndrome in which interests associated with various remaining sources blame each other. Instead, we need a policy that attacks all remaining and future sources of environmental lead exposure, taking into account both priorities of attack and the need for parallel, not serial attacks.

Further, as measured body burdens of lead are lowered, we are able to measure serious health and behavioral effects of lead and the warning signs of lead poisoning at lower blood levels not previously considered to be as significant to health. This reinforces the need for an "all-sources" approach to lead exposure reduction as the appropriate public policy for fighting this disease. It is important, in crafting that approach, that effective measures be included for an immediate, prompt and lasting massive attack on the indoor sources of lead exposure, especially lead paint in housing.

A PERSPECTIVE ON "SAFE" EXPOSURE TO LEAD

To place lead exposure reduction measures in context, it is important to know what is meant generally by a "safe" level of exposure to lead. The scientific definition of the highest level of lead in humans that is not associated with adverse biological effects has been repeatedly lowered in the past two decades. It is worth examining the reasons why.

In 1970, the Surgeon General defined "undue lead absorption" as a blood lead level of 40 micrograms per deciliter (40 ug/dl). That level defined a perceived threshold of toxicity above which lead had clearly adverse effects. At that time, the average blood lead level in Americans was around 15 to 20 ug/dl. In 1978, the Centers for Disease Control lowered the definition of undue lead absorption to 30 ug/dl, based on growing evidence that lead exposure at lower levels posed measurable health hazards. A few years later, the definition was lowered again, to 25 ug/dl. The average blood lead levels in Americans was then about 12 - 15 ug/dl. At this point, the topic is again under review by a committee of experts, and the Centers for Disease Control testified before a Senate hearing earlier this year that it will to lower the definition to the range of 10 to 15 ug/dl.

Two factors account for this striking downward trend in the medical definition of "excessive" exposure to lead. First, the past 20 years have seen marked improvements in the ability to detect subtle biochemical and neurobehavioral effects induced by lead in the body. Second, the average exposure to lead has been greatly reduced by regulatory measures such as the removal of lead from gasoline, the voluntary phase-out of almost all domestic lead-soldered food cans, and the ban on new lead-based household paint. As sources of lead exposure have been reduced, the average person's blood lead level has gone down. Today, average blood lead is about 5 to 7 ug/dl, perhaps one-third of what it was 20 years ago.

While the reduction in exposure is good news, exposure has not yet reached a generally "safe" level. As average exposure has declined, research has been able to detect adverse effects at lower and lower levels of lead in blood. Twenty years ago, it would have been essentially impossible to distinguish toxic effects of lead in people with a blood lead level of 10 ug/dl, because there was no comparable group of people with a significantly lower blood lead level to serve as a "control" group. Today, when large numbers of children at last have blood lead levels around 5 ug/dl, adverse effects can be detected in individuals with a 10 ug/dl level. Such exposure has been associated with adverse effects on neurobehavioral development in children, and perhaps with an increased risk of hypertension in adults.

From this analysis, it should be clear that today's average blood lead level of around 5 ug/dl is not necessarily "low," nor can it be presumed to be without toxic effects. It is not unreasonable to predict that, if the average blood lead level in Americans were reduced to 2 ug/dl, research could probably demonstrate adverse effects at 5 ug/dl.

Where does this trend lead, and what does it suggest about efforts to control exposure to lead? One answer lies in the research of Dr. Clair C. Patterson, of the California Institute of Technology. Patterson has shown through geochemical techniques, that the natural background lead level in human beings is 100- to 1000-fold lower than the level found in modern Americans. In other words, comparisons between blood lead levels of 5 to 7 ug/dl and 15 to 20 ug/dl are comparisons of gross overexposure to lead and very gross overexposure; the lower level in this case does not represent "low" or "natural background" exposure. In theory, even the "natural background" level of exposure might not be completely without toxic risks, although it represents the theoretical limit of exposure reduction. However, regulatory measures to date, as effective as they have been, have not altered the basic fact that modern exposure to lead is hundreds of times higher than background levels. If that is true (and Patterson's geochemical evidence is persuasive), the historical trend that has seen biomedical research find adverse effects at lower levels of lead in the body might reasonably be expected to continue indefinitely.

In short, regulatory efforts to date have not achieved a level of exposure to lead that is "safe," even for the average person whose blood lead level is around 5 ug/dl. And for hundreds of thousands of children whose blood lead levels are much higher than average, the exposure reduction needed is even larger than it may initially appear.

6

IMPLICATIONS FOR CONTROL STRATEGIES

Given a perspective on lead toxicity that shows no clear lower boundary of unhealthful exposure, what control strategy makes the most sense? A 1980 report by the National Research Council, "Lead in the Human Environment," noted the trend just described in the biomedical definition of lead toxicity. That NRC Committee recommended both that "...Efforts to abate lead hazards for children with elevated blood lead levels should be continued or expanded..." and that "A serious effort should be made to reduce the baseline level of exposure to lead for the general population of the United States." The Committee identified six potentially valuable approaches toward those goals:

- o Regulation of specific sources of exposure;
- o Population screening, to identify individuals with high exposures;
- o Planning, to reduce or eliminate sources and separate populations from exposure conditions;
- o Technological changes, such as increased reliance on recycled lead and replacement of hazardous uses of the metal with safer alternatives;
- o Social welfare programs, including improvements in the quality of housing;
- o Education, about lead hazards and preventing exposure.

The same NRC Committee also described the Federal effort to control exposure to lead as "fragmented" and "disjointed," and called for increased inter-agency coordination and cooperation in a systematic effort to reduce exposure to lead.

The advice of that NRC Committee is as appropriate today as it was a decade ago. Although substantial controls have been achieved over lead emissions from motor vehicles and lead from soldered food containers, in many other respects, the sources of lead in the environment pose essentially the same problems now that they did in 1980. In particular, the enormous reservoirs of lead in old paint in housing, and in plumbing systems, have remained major sources of excessive lead intake, and have grown in relative importance as other, more controllable sources have been reduced or eliminated. A systematic, coordinated attack on all sources of lead exposure is needed now just as badly as it was in 1980, when the NRC first called for one.

COMMENTS ON COMPONENTS OF A COMPREHENSIVE PROGRAM

Reduction of Exposure To Lead-based Paint. For nearly 20 years, since the Lead Paint Poisoning Prevention Act of 1971 gave that responsibility to HUD, the Federal Government has been sponsoring research on ways to abate lead paint hazards . From the very start, several facts have been obvious:

- The amount of old, high lead content paint in housing is very large, and paint continues to be a major source of severe overexposure of children to lead.
- There is no easy, safe way to remove lead paint from the surfaces on which it occurs. Removal is a slow, labor-intensive process. If not done carefully, it may

expose removal workers to excessive lead absorption, and it also may contaminate the home with lead dust that will pose an increased hazard to the inhabitants.

- Sealing intact lead paint in place is an alternative; it is also slow, labor-intensive and only effective for some surfaces, and leaves a potential lead disposal problem if/when the housing is ultimately demolished.
- Removing lead paint from any significant fraction of the nation's contaminated housing stock is a necessary but enormous and costly undertaking.
- The longer that effective action in tackling the problem is delayed, the greater the ultimate cost is likely to be.

Because of the costs involved, HUD apparently decided in the 1970's that the nation could not afford to prevent lead paint poisoning by eliminating paint in housing as a source of exposure. As a result of this decision, the national strategy has essentially been to employ children as environmental monitors, the residential equivalents of the canary in the coal mine. When a child shows up with a high blood lead level, abatement efforts are focused on that individual child's environment. If resources are available, lead paint sources in that child's home may be detected and abated--after the child has already been lead-poisoned.

Even if all children were now effectively screened for lead exposure (which they are not -- less than ten percent of all children are ever screened), and even if detection of a high blood lead level always resulted in identification and abatement of the responsible sources of lead in the child's environment (which it does not, both for technical reasons and because of inadequate resources for lead removal programs), the strategy of using lead-poisoned children to trigger priority choices in the lead-paint abatement program is morally unacceptable. Is the economic cost of removing lead paint (and lead in plumbing) so high that we are willing to accept instead the enormous, if at this point largely unmeasurable, social costs of lead poisoning?

Our society's failure to solve the problem of lead paint poisoning is not due solely to inadequate technical knowledge. It is true that research is needed. Methods for determining whether paint contains lead are less certain and more expensive than should be the case. And removal or safe encapsulation of existing lead paint is also unduly expensive. The legislative proposals to date would give new authority to the EPA, in the form of a broad mandate to conduct research on lead paint abatement strategies, coupled with authorization for appropriations to fund that research.

But research will not provide a scientific "magic bullet" that will suddenly make this problem solvable. Lead poisoning is not just a biomedical problem; it is a social problem. Abating lead paint hazards is not just a technological challenge; it is a social task of great complexity and difficulty. Congress should create a mandate that will make preventing lead poisoning a major, achievable priority of our society. Unless we can place this largest and most serious known environmental threat to our children's health high on the national agenda of problems we must solve, we cannot expect funding levels adequate to solve the lead paint problem.

In short, we will not develop and cannot await a "magic bullet"; we need to bite the bullet. We must commit whatever resources are needed, over the next several years, to de-lead the environment. The 102nd Congress should direct by law that the resources be made available and rapidly applied to ensure that this enduring problem is finally solved in an effective and socially constructive manner.

In Consumers Union's judgment, the legislation proposed to date could more adequately address the lead paint problem. It recognizes, quite appropriately, the dismal record of the Department of Housing and Urban Development, which has failed to substantially resolve the lead paint problem over the past twenty years. And it would make EPA the lead agency in a inter-departmental task force charged with tackling the lead paint problem. But a direct, immediate attack on existing lead paint is necessary and it should not await the outcome of detection and removal research. To abate action until research is completed and its results implemented would condemn many thousands more to lead poisoning.

Lead in drinking water. A comprehensive national lead poisoning prevention program would establish by law a National Primary Drinking Water Standard for Lead measured at the tap of 5 ug/liter. CU would prefer to see the EPA adopt this standard very quickly through the normal administrative procedures. However, it has been clear for over a dozen years that the drinking water standard for lead was far too high (the NAS/NRC recommended lowering it in a 1977 report); yet EPA to date has not made final a new and more appropriate standard. Administrator Reilly has told the Senate that final action is imminent. But unless this happens and unless the new standard is adequate, it will be appropriate for Congress to force the issue.

Blood-lead screening. A comprehensive program would provide for reports on the status of blood-lead screening and reporting programs, and for an assessment of a mandatory pre-school lead screening requirement. In CU's judgment, expansion of the screening program is needed. Never adequate to begin with, it was cut back substantially during the past decade. (We note that the Administration's budget proposal for FY 1992 falls about $10 million short of the appropriation that the Centers for Disease Control should have, in our view, to conduct a minimally adequate program. And even that amount would not allow for a routine national screening program.) A national lead screening requirement would be a valuable step forward, in our view. Screening should occur at regular intervals from the time an infant learns to crawl (and thus can be exposed to lead in soil and dust) until the age of school entry. The value of screening in terms of the health of the screened children is potentially very great. Having more extensive and consistently reported national data on childhood blood lead levels would also be of great value. These values are substantial enough that they should be established and required as a matter of national policy.

Ban on lead-soldered food cans. The domestic canned-food industry has eliminated over 95 percent of lead-soldered cans over the past decade. A ban could accelerate the completion of that process domestically, and would extend the process to imported canned foods. Consumers Union does not know what fraction of imported food cans are lead-soldered, but this may be a potentially important source of exposure to dietary lead, especially if there are ethnic populations who depend largely on canned foods to have access to their traditional diets. Whether or not canned food is considered an indoor source, it clearly should be addressed. Indeed, while comprehensive legislation should address this source, immediate action does not require new legislation. The Food & Drug Administration (FDA) is under this Subcommittee's legislative oversight. FDA already has the authority to ban all lead solder in domestic food cans and apply that standard to imports, but has chosen instead to rely on the slow progress of voluntary efforts. It would be helpful if the Committee would simply inform the new FDA Commissioner, Dr. Kessler, of its interest in reducing unnecessary sources of lead exposure and request the FDA to take action to reach the small remaining lead-bearing portion of the canned food supply.

Controls on additional sources of lead exposure. Proposed legislation would ban the use of lead in cosmetics and packaging materials, and require FDA to expedite its ongoing decision process on lead in ceramic glazes. Also addressed in the bills that have received consideration to date are bans on the manufacture and sale of a wide range of lead-containing products, ranging from fishing sinkers to foil on wine bottles. Consumer Reports in its March, 1991 issue, reported on the use of leaded inks to imprint bread wrappers which many consumers then turn inside out and re-use to store other food; there is the potential for the leaded ink then to contact the stored food, unnecessarily risking the addition of significant doses of lead to the family diet. While CU recognizes that lead has many useful functions and each of those uses has economic value, we also believe that safer alternatives exist or can be developed for each of the uses specified in this bill. The issue is not whether beneficial uses of lead are going to be lost, but whether even a small risk of a lead-poisoned child is socially acceptable, when safer alternative technologies are available.

Mr. Chairman, we believe that this Subcommittee should develop and act on a comprehensive proposal to remove all unnecessary, from both indoor and outdoor sources, from our environment. Though it will be an expensive process, the health care effects and productivity losses of lead poisoning are themselves estimated to be far more expensive. Lead poisoning is a tragic disease, all the more so because it is preventable. We urge you to make its eradication a top national priority and will work with you to meet that goal. Thank you.

Mr. **Waxman**. Thank you. Mr. Ringen, why don't we hear from you next.

STATEMENT OF KNUT RINGEN

Mr. **Ringen**. Thank you, Mr. Chairman, for holding these hearings. I am Knut Ringen. I am the executive director of the Laborers Health and Safety Fund of North America. I am a public health doctor, and I am a member of the National Advisory Committee on Childhood Lead Poisoning.

The Laborers represent over 500,000 workers in the United States, and I bring you greetings from the General President, Mr. Fosco, and from Vice President, Max Warren, who commend you for holding these hearings.

I would like the written testimony to be part of the record and I would also like to enter a series of articles that appeared last week in the Philadelphia Inquirer, entitled "A Failure to Protect Workers from Lead," for the record as well, which I think are very informative.

Mr. **Waxman**. Without objection, we will receive those for the record.

Mr. **Ringen**. Thank you. I am here to talk about mainly lead and lead abatement. We have a very great concern in those because our members, as part of their jurisdiction—occupational jurisdiction have demolition and lead abatement is a major part of that jurisdiction.

We provide extensive training to our members. Our 76 training centers in the United States have outstanding and nationally recognized training programs. For the past 3 years we have been providing lead abatement training as well. This is done within the context of a joint union employer operation and trusteeship, and it is very important, in order to protect our members from health problems on the job.

Lead is a very serious problem in this country for both children and for workers. You have heard about children before today. In terms of workers, especially in construction, we see very very serious problems with continued exposure to lead, and it is not unusual for workers in this industry to have high chronic levels of lead in their blood and in their bodies.

In addition to that, we are seeing more and more children of workers in construction who have lead poisoning as well as a result of lead being brought home from the workplace. Dr. Graef, who testified this morning, has several children of lead abatement workers among the patients in his clinic at this point in time.

This is indicative of a very fundamental problem that we would like you to take into consideration. Construction workers face appalling health and safety on the job. Construction is the most dangerous industry in the country.

If I can draw on one particular episode in our history that is of relevance to this hearing, it is asbestos abatement, which we have now been doing for 15 years, where we also have a major interest and where we try to protect our workers as much as possible, yet we are seeing continuous entry into this field of unscrupulous contractors, fly-by-night people who come and go, who hire people off the street, who do not protect them on the job, and who undercut every effort to provide for a safe workplace and make it economically impossible just about to have proper work practices and safety provisions on the job.

This is the result of a failure to enforce whatever standards exist and a failure to establish standards in construction. I would like to note that OSHA does not have a standard for lead protection or protection from lead exposure in construction. As a result of that, workers are typically exposed at very high levels. More importantly, no enforcement of this problem takes place on the work site.

In conclusion, I would just like to say that we are prepared to be involved in deleading, and our members have an interest in having worked in that area. It is a massive undertaking, which must be proceeding on without delay, if the children are to be protected. It is important to recognize that unless that work is done properly, then neither those workers nor the children, nor the community at large will be protected from lead exposures.

Therefore, we urge you to take into account, Mr. Chairman, in any legislation, that proper worker protection measures be a significant part of the legislation that you are proposing.

Thank you very much for inviting us to testify here, and we will answer your questions.

[Testimony resumes on p. 262.]

[The prepared statement and attachments of Mr. Ringen follow:]

Testimony of

Knut Ringen, Dr.P.H., M.P.H., M.H.A.
Executive Director
Laborers' Health and Safety Fund of North America

Summary

The most immediate lead problem in this country is exposure of little children to lead-based paint. To protect the health of children, a national lead-paint abatement program is urgently needed. Unless proper abatement--by qualified contractors and trained workers--is assured by federal regulation, workers and the public, especially children, are at serious risk.

The Centers for Disease Control estimates that more than 825,000 American workers have potential work-related lead exposures. Construction workers, in particular, are at risk of lead poisoning, which can cause nervous system disorders and other serious health problems.

The Laborers' Health and Safety Fund, a joint union-employer program, recommends that:

- the U.S. Environmental Protection Agency be given primary responsibility for solving the lead-paint abatement problem;
- the National Institute for Occupational Safety and Health be responsible for training programs and for assessing lead-exposure risks confronting workers; and
- the National Institute for the Environmental Health Sciences research the human health risks associated with lead.

Introduction

Mr. Chairman, thank you for inviting us to testify here today. I am Dr. Knut Ringen, Executive Director of the Laborers' Health and Safety Fund of North America. The Fund is a joint initiative of the Laborers' International Union of North America and its signatory contractors. Thank you for inviting me to testify.

I am a public health doctor by training, with a doctorate from Johns Hopkins University. My career has focused on occupational health research and public policy. For five years prior to my current post I was in charge of special population studies at the National Cancer Institute, National Institutes of Health. I serve on the Advisory Committee on Childhood Lead Poisoning Prevention appointed by HHS Secretary Sullivan.

Attached to this testimony is a position paper on the need for a national strategy for lead paint abatement by John Moran, the Fund's Director of Occupational Safety and Health.[1]

The Health and Safety Fund has a strong interest in the issue of lead exposure in the environment and the workplace. The union represents 500,000 members in the United States and Canada, most of them construction laborers in the United States. The union's laborers are involved in construction, demolition and toxic-substance control including the abatement of hazardous waste, asbestos and lead.

For adults, occupational exposures are the most important sources of lead exposure. Laborers are exposed to lead not only during abatement of lead-based paint in residences, but also in industrial settings and during the demolition of factories, bridges and other major structures where lead-based paint has been used for decades.

A union-employer program affiliated with ours, the Laborers-AGC Education and Training Fund, developed the only nationwide lead abatement training course which meets all state and federal regulations. The 32-hour course is available thus far at 16 sites for about 1,000 workers annually.

The Lead Problem

The most immediate lead problem in this country is lead-based paint. In 1988, the U.S. Agency for Toxic Substances and Disease Registry estimated that 42 million housing units in the United States have lead-based paint. That number is now believed to approximate 57 million. In addition, literally thousands of factories, bridges and other structures have lead-based paint.

Increasingly, construction jobs such as bridge repair and demolition are causing acute lead poisoning of laborers, iron workers, painters and other workers. Lead exposures to welders and cutters have been documented at levels well above 1,000 times the Occupational Safety and Health Administration (OSHA) permissible level of exposure set for general industry.[2] We know of workers who have suffered lead poisoning who were wearing the wrong respirators or who were near work outdoors involving lead-based paint.

---

[1] Moran is a former Director of the Division of Safety Research, National Institute for Occupational Safety and Health, and an adviser to federal agencies on lead abatement. He served last year on a HUD committee advising the agency about worker protections for lead abatement in public housing; his criticisms of the draft guidelines last spring led the agency to reassess and improve those standards. Moran also chairs a subcommittee on lead in the Building and Construction Trades Department, AFL-CIO, which has urged OSHA to fast-track a comprehensive safety standard for construction similar to that in place for general industry (**attachment 1**).

The California Department of Health Services reported a 44 percent increase from 1987 to 1988 in the number of blood-lead laboratory findings exceeding the state's reporting threshold. People with the highest blood-lead levels were employed in construction. Recent reports in the CDC Morbidity and Mortality Weekly Report and other scientific reports confirm these trends. For instance, the Centers for Disease Control report in September 1989 indicated that while construction represented only 5 percent of the reported excess blood-lead findings, 30.4 percent of the workers at very high levels were from the construction trades. At the same time, more than 825,000 American workers have potential work-related lead exposures, according to the CDC.

Lead-Related Diseases

Diseases resulting from lead exposures in the workplace are numerous and well known. In fact, lead-related diseases were among the first recorded occupational health problems in the medical literature. Levels of lead exposures that were previously considered safe now are considered dangerous, as scientific research gains a better understanding of the neurological, hypertensive and reproductive toxicity of lead. Once absorbed in the body, lead is found in all tissues. Yet 90 percent of the body burden is in the bone, where lead accumulates. Lead affects several organ systems, with the most sensitive being the nervous system. Lead also affects the gastrointestinal, hemopoietic, and renal and reproductive (male and female) systems, and thus fetuses.

---

[2] Workers in general industry have been protected since 1978 by a comprehensive lead standard issued by OSHA. It provides for training, medical monitoring, respirators and other protections. However, the only OSHA construction regulation involving lead sets an allowable concentration of lead in the air that is four times higher than for general industry. More, the construction standard does not provide any of the monitoring, medical surveillance or other protections in the general industry standard. Most often, excessive exposures to lead among construction workers become known only when a worker's health fails or the worker sees a physician who recognizes lead poisoning symptoms.

Symptoms of lead exposure include fatigue, difficulty in concentrating, irritability, headaches, nausea and sleep disturbance.[3]

Strategy for Lead-Based Paint Abatement

It is very clear that our major thrust in dealing with the lead exposure problem must be to protect our nation's children, who are the most susceptible to diseases caused by lead. There has been a particularly poor understanding of the link between worker protection and protection of children and the general public, however. This is particularly true when it comes to lead-based paint abatement in public housing.

We have learned bitter lessons in the construction industry over similar issues, asbestos being the most prominent. Poor worker training and poor contractor supervision have led not only to the generation of yet another wave of asbestos victims but have needlessly exposed the public.

Compared with asbestos abatement, the thrust to de-lead our nation's public and private housing presents a far greater potential for poor work practices and procedures that could harm the public health, especially children. This threat exists because the health consequences of excessive lead exposure are acute and chronic and, particularly in children, can have lifelong consequences. This is different from asbestos, which usually does not manifest ill consequences for 20 or more years after exposure.

In fact, poorly conducted lead-based paint abatement can increase the risks to the public. The risks are not solely to public housing residents but to residents--especially children--in any older home under renovation.[4] Also, as is the case with asbestos, children face a secondary risk of lead poisoning from lead dust brought home on the clothing of a lead abatement worker.

Dr. John Graef of Harvard University, a witness at this hearing, has provided important information bearing on this subject.

---

[3] Attached is a photocopy of the front and back of a health alert about lead poisoning which the Health and Safety Fund provides for local unions to distribute to their members who are construction laborers (**attachment 2**).

[4] See Marino, P.E., et al. "A Case Report of Lead Paint Poisoning during Renovation of a Victorian Farmhouse," AJPH October 1990. 80:10, 1183-85.

Already, in Massachusetts, Dr. Graef's lead-disease clinic has noted several cases of lead poisoning suffered by abatement workers on the job and by children of lead abatement workers.

The lead problem in construction and concerns about resulting public exposures have prompted Maryland and Massachusetts to enact tough lead standards governing lead exposures in construction, lead-paint abatement, and training and certification for workers, supervisors, contractors and inspectors. These states have moved forward to meet the recognized health threat despite the federal government's lack of leadership. The Massachusetts lead abatement program has accredited the Laborers-AGC Education and Training Fund.

Recommendations for Legislation

Proper worker training, medical surveillance and enforcement of worker protections are essential if we are to prevent disease from lead exposures.

First, a regulatory approach is needed to protect children and other members of the public, and workers. We recommend that OSHA be required to issue an interim health standard for lead in construction based upon the criteria in the general industry standard under 29 C.F.R. 1910.1025.

While an OSHA lead standard for construction is necessary to protect workers, that alone would not be sufficient.

Given that one federal agency must be responsible for solving the lead-based paint abatement problem in this country, we recommend that the U.S. Environmental Protection Agency (EPA) be assigned full responsibility for lead-based paint abatement, both for promulgating the regulations and enforcing them. Abatement programs should be administered along the model of the Asbestos Hazard Emergency Response Act, with stronger enforcement provisions.

To advise the EPA Administrator on research, regulatory programs and enforcement, we would recommend the establishment of two advisory task forces, one interagency and one comprising experts from outside the federal government. The interagency task force should include OSHA and would be responsible for integrating a comprehensive lead standard for construction into the overall EPA program.

The National Institute of Occupational Safety and Health (NIOSH) should be responsible for training programs and for assessments of lead-exposure risks confronted by workers.

NIOSH is statutorily responsible for developing and evaluating work practices and control technologies, with emphasis on ensuring the safety and health of workers. NIOSH participation would ensure that accountability in terms of worker health and safety is included in the design and development of those technologies. This assistance can come in the form of professional guidance on personal protective equipment, exposure monitoring for abatement technologies, the medical surveillance of workers, and the analysis of exposure to lead and other hazards associated in occupations involving lead-based paint abatement.

We advocate establishing requirements for training and certification of lead-based paint abatement workers, supervisors, designers, inspectors and building owners. Not only should such a program establish training curricula for lead-abatement workers for public and private housing units, but also for nonresidential structures such as factories.[5] We urge the committee to include training and curricula for workers in these fields where the type of work and exposures differ from those in housing abatement.

It has been our experience that the federal agencies charged with overseeing worker training programs have been far too timid in protecting worker health and safety. We thus urge the Committee to recommend specific numbers of hours of training for workers, supervisors, contractors and inspectors. We strongly believe that a 40-hour course, which Congress required for hazardous waste workers in the Superfund Amendments and Reauthorization Act, is appropriate for lead abatement workers.

We also recommend that the National Institute for the Environmental Health Sciences conduct research to pinpoint the human health risks associated with lead exposure, and to detail or develop treatment protocols to reduce the effects.

To support these programs, we recommend the following annual funding authorizations:

- $45 million for the Environmental Protection Agency (for regulations and enforcement)
- $6.5 million for the National Institute for the Environmental Health Sciences;
- $8 million for the National Institute for Occupational

---

[5] Training criteria also are needed for work outdoors on such structures as bridges. Hazardous lead exposures are known to occur and have been documented by workers in these settings.

Safety and Health (for training programs); and

- $6.5 million for the National Institute for Occupational Safety and Health (for research).

Conclusion

In summary, the Laborers commend you, Chairman Waxman, for your interest in the issue of lead in the environment and the community. We recommend the proposals outlined by our testimony today. Lead poisoning is a major threat to the health of Americans of all ages and throughout our society.

De-leading the nation is a massive undertaking which must proceed with adequate safeguards. We stress again that unless workers are properly trained and supervised, contractors licensed and conscientious, and government enforcement vigilant, neither workers nor the general public will be protected adequately. We know how to do the job right, but the Congress must set priorities.

We want to reduce the threat to Americans from lead and create a safer, healthier environment for all. Thank you.

ATTACHMENT 1

LEAD PAINT ABATEMENT: THE NEED FOR A NATIONAL STRATEGY

BACKGROUND:

The recent HUD Report to Congress, Comprehensive and Workable Plan for the Abatement of Lead-Based Paint in Privately Owned Housing, estimates that 57 million privately owned and occupied homes contain lead-based paint of which 900,000 are occupied by families with children under the age of 7. The report discusses the relationship between lead-based paint, indoor lead levels in dust, and childhood blood-lead levels. The Report also reviews the recommendations from the Centers for Disease Control with regard to childhood blood-lead levels which constitute a health risk.

The Report further reviews the relationship between lead-based paint abatement and subsequent indoor lead dust levels. While a substantial research has not been done in this area, the general view is that lead levels in settled dust in homes after lead-based paint abatement depends to a great degree on the methods used in the abatement activity and subsequent clean-up. An excellent example, not reviewed in the HUD Report, is the recently published research by Frafel, et al. (American Journal of Public Health, Oct. 1990). That study indicates that lead levels in dust increased 10 to 100 times over the pre-abatement levels in homes after lead-based paint had been abated using traditional methods. Evaluations of lead in dust levels six months after abatement evidenced even greater increases. Non-traditional abatement methods evidenced some improvement but were not as efficacious as required. Improved abatement methods, enhanced worker protection measures, enhanced occupant and furnishings protective measures, improved disposal methods, and worker training were all recommended as needed measures.

It is evident that lead-based paint in occupied housing presents a clear and increasingly significant risk to the public, especially to our nation's children. It is further evident that the abatement of this hazard is neither simple nor straightforward. In fact, improper abatement may lead to increased risk to occupants of abated housing units. The magnitude of the problem is enormous and has a potentially adverse health impact on a large percentage of the current young generation and the next generation as well. The negative consequences of improper abatement of lead-based paint simply cannot be ignored. The health risks to children can be life long.

Like the occupants of housing units where lead-based paint is abated, the workers who perform the abatement activity are at risk of excessive exposure to lead. OSHA promulgated comprehensive lead regulations for general industry in 1978 in order to address the worker health effects from lead exposures. Recent reports evidence significant non-compliance with these standards (American Journal Industrial Medicine, Vol. 18, No. 1, 1990). Further, those workers employed in the construction industry sector are not covered by the comprehensive general industry OSHA standard. Increasing evidence from the few states which require reporting of elevated blood-lead levels highly demonstrates that construction workers are severely over-exposed and suffer very

BEST COPY AVAILABLE

highly elevated levels of lead in blood. The construction industry will be the primary industry engaged in lead paint abatement. Yet, the construction industry is the least experienced in recognizing the hazards of lead. Furthermore, the construction industry is the least experienced high hazard industry in the country when it comes to occupational health recognition and prevention programs.

Lead-based paint abatement is complicated with regard to the implementation of methods to reduce or eliminate the hazard without increasing risks to workers, children, and the public. Federal HUD, EPA, OSHA, and DOT are directly involved in the regulation of specific lead abatement activities. This complex array of regulatory agency activities is not without precedent. Asbestos abatement is a similar case and one which is of significant lesser magnitude than lead since it involves less than 1 million commercial, public, and school buildings. OSHA regulates asbestos exposures to workers engaged in activities within the scope of the OSHA preview. EPA regulates public schools and applies the OSHA asbestos standards to public employees in those states which are not covered by OSHA regulations. EPA also establishes minimum training requirements for those engaged in asbestos abatement including a training provider approval program, and regulates disposal of abatement debris. DOT regulates the transportation of asbestos waste. HUD has issued major guidelines addressing the issue of abatement in public and Indian housing including a revised worker protection chapter due to the deficiencies in the original version largely associated with the huge

OSHA disparity between general industry workers and construction workers standards. The interagency coordination between the regulatory activities of these agencies has not only created a tangled bureaucratic nightmare for the regulated communities. It has also left major gaps where workers and the public are exposed as a consequence of asbestos abatement activities which are not clearly addressed. Examples include asbestos identification in commercial buildings and the lack of accredited training requirements for workers covered by the OSHA standards. The important issue is, however, that no one agency or congressional committee is accountable for the program. Because the lead-based paint abatement issue is more complex and vastly greater in magnitude than asbestos, such a confusing array and lack of a single accountable federal agency should not be permitted and is detrimental to worker and public health as well as the environment.

CONCLUSIONS:

Basic conclusions relevant to the lead-based paint abatement issue based upon the current situation are as follows:

1. Lead-based paint in housing represents a known source of risk especially to children.
2. Huge numbers, some 57 million, of homes contain lead-based paint.
3. Lead-based paint can be removed from houses or other methods can be utilized to largely eliminate the risks to occupants from this hazard.

4. Failure to respond to the lead-based paint problem in housing will result in the continued exposure of the public, especially children, to this hazard.
5. Tightened recommendations by CDC with regard to blood-lead levels in children which constitute a health threat will increase the scope and magnitude of this problem while heightening public concern.
6. Improved abatement methods including worker training in these methods is necessary if abatement is to effective in reducing occupant exposures to lead. Current methods have been demonstrated to be inadequate and indeed may increase the health risk to workers and occupants as a consequence of increased exposure to lead.
7. Current OSHA comprehensive regulations do not apply to construction workers which will be the primary labor force conducting lead paint abatement.
8. Current HUD guidelines only recommend comprehensive worker protection measures due to the absence of such OSHA regulations.
9. No federal training requirements or training program criteria for lead abatement activities currently exist.
10. Several federal agencies are currently involved in various aspects of lead control activities. No

federal agency is evidencing a lead role in coordinating this complex undertaking.

11. No one committee in the House or the Senate has clear leadership role from a legislative perspective.
12. Work in response to this emerging issue has already begun. The potential for aggravation of the childhood lead poisoning problem as a consequence of improper abatement methods is highly probable. This problem will continue to escalate in the absence of comprehensive federal control.

RECOMMENDATIONS:

Because the magnitude of the potential public health threat is large and increasing and several legislative and federal agency mandates must be utilized to manage the lead paint abatement crisis, we recommend that the following be considered:

1. A single lead federal agency, EPA, be assigned responsibility for the lead paint problem.
2. Within a defined period after enactment of lead legislation comprehensive, issuance of interim regulations which address at least the following categories:
   - Worker protection
   - Public protection
   - Environmental protection
   - Training standards, criteria, certification, accreditation.

3. Within a specified time period, promulgation of final regulations based upon those listed in 2 above.
4. The lead agency be charged with establishing an interagency coordinating committee which will function in an advisory capacity to the EPA Administrator on the regulatory programs interactions as well as coordination, enforcement, and research.
5. The National Institute of Occupational Safety and Health be charged with the responsibility of developing an Occupational Health Hazard Evaluation focused on lead paint abatement and that be provided to the EPA Administrator within 9 months of enactment.
6. The National Institute of Environmental Health Science to perform an Environmental Health Hazard Evaluation.
7. EPA to be responsible for annual reports to Congress on the progress in implementing the program.
8. EPA to establish a National Advisory Committee to serve as advise and consultants to the Administrator for the lead program.

\2240.00

Testimony of Knut Ringen
Laborers' Health and Safety Fund
Attachment 2

HEALTH ALERT

Laborers' Health and Safety Fund of North America

905 16th Street, N.W.
Washington, D.C. 20006
(202) 628-5465

LEAD POISONING

Construction laborers often work where bridges or other metal structures are sandblasted or torn down—or where buildings and other structures are renovated. In many cases, the paint on these structures contains lead.

The Hazards

When structures covered with lead paint are cut, sandblasted, sanded, heated or burned, lead is released into the air. (A recent U.S. government report found lead poisoning in five of nine construction workers using torches to cut up a bridge that was covered with lead paint.) Anyone near such work is at risk.

Lead is very toxic if you breathe or swallow it. The first signs of poisoning are weakness, joint pain, weight loss, loss of sleep, low blood pressure, memory loss and stomach upset. Lead harms the gums, stomach, kidneys and blood. It can cause severe anemia or permanently damage the brain and nervous system.

What You Can Do

If you are stripping, sanding, heating, cutting or otherwise disturbing a painted surface—or you are near such work:

- Ask your contractor to tell you if the paint contains lead. The OSHA hazard communication regulations say the contractor must let you know.

If the paint contains lead:

- Follow your contractor's special procedures for this work. Some states have special rules for work on lead-coated surfaces.
- Use wet methods (where possible) to keep the dust down.
- Use a correct respirator to protect your lungs. Cutting with torches or heating produces a fine lead fume. A dust respirator will NOT protect you from that. (The poisoned bridge workers were wearing dust respirators.) The contractor must provide the right respirator and train you to use it.
- Always wash your hands and face before smoking, eating or drinking. This is to prevent swallowing lead from your skin.

Health and Employment: Hand in Hand

Write us for more information.

Mr. **Waxman**. Thank you very much, Mr. Ringen. Mr. Gorman.

STATEMENT OF EDWARD J. GORMAN III

Mr. **Gorman**. Thank you, Mr. Chairman. My name is Edward Gorman. I am executive director of the Carpenters National Health and Safety Fund. I am here today representing General President Lucassen, who also sends his regards and the United Brotherhood of Carpenters.

Our 600,000 members face lead-based paint hazards, both at work and at home, whether from on-the-job exposures, which, in turn, get carried home on workers' clothing, or simply from living in and renovating homes built before 1980, which contain lead-based paint.

You have heard this morning about the legacy that leaded paint now brings to the workplace and to the home front. It is an inheritance of known persistent and insidious health dangers to children and to working men and women.

I will not belabor this hearing or the record by repeating much of that, but there are a few things that I think are instructive. This subcommittee should know the extreme effects of lead's toxicity on working men and women, particularly those in the construction trades.

Published research tells the story of workers in the construction industry at a greater risk than any other category of workers, to exposures to and retained blood lead levels above 70 micrograms per deciliter. Seventy micrograms per deciliter is an emergency medical condition. A 1989 article published in the CDC's Morbidity and Mortality Weekly Report indicates that 34 percent of those with blood lead levels exceeding 70 micrograms come from workers in the construction trades.

Absorption of lead through inhalation of lead dust and fumes is a high-risk problem for workers, as also noted in a California Department of Health Study. Its findings include that lead lives in the bone for a half life of at least 20 years, that there is not practical way of determining, on a broad scale basis, what the levels of lead in the bone are and, therefore, that we don't know, therefore, what the total body burden of lead is in most workers and in most men and women and children in this country.

Extrapolating from the study's data, we estimate that nearly 500,000 construction workers are lead-exposed, many on a regular basis. As my colleague mentioned, the ironic part is, just as we are lowering the standards for lead, we are seeing greater and greater exposures in the construction work force with no end in sight or no help in sight from OSHA.

While the construction standard remains at a staggering 200 micrograms, the standard currently proposed by many doctors, including Dr. Landregan, of the Mount Sinai Medical School, is for 20 micrograms, 10 times lower than currently exists.

You should know that carpenters perform a substantial amount of private and public work in private and public housing. Our traditional jurisdiction started with wood and has extended to substitutes that have come into vogue over the years. As a result, interi or systems work, now supports fully one-third of our construction membership.

I would like to talk to you a moment about our recommendations. I will skip the rest of the presentation, as it is entered in the record.

Our recommendations are as follows. It is necessary, in our view to give homeowners, landlords and other building owners both the opportunity and responsibility to determine whether their respective buildings contain lead-based paint and to assess whether the paint is in a hazardous condition.

Adequate legislation must therefore be enacted which will provide for inspections and notification to homeowners and tenants of leaded paint in all dwellings built before 1980.

Just as communities have enacted right to know statutes concerning their exposures to public health risks from outdoor environmental contaminants, so should Congress finally tackle the health risks associated with indoor lead-based paint, by going to the source and learning about the condition of the soil and paint around the homes.

Such legislation could set phased in priorities for those buildings where the greatest potential hazards exist: Federal, public and military housing first, followed by large multiunit apartment and condominium dwellings, and later smaller multiple dwellings and single family homes. As a commentator noted earlier, we inspect houses for termites, that is just out of concern for our homes, we ought to do at least as much for the occupants of those homes.

Legislation should also encourage or perhaps require restrictions on transfers of property, unless or until a lead inspection has been performed in the dwelling, is either lead-free or with leaded paint, certified to be in encapsulated form. For those dwellings where lead-based paint is found in a deteriorated condition or where high lead dust levels exist, an appropriate remedial response action should be recommended by a certified environmental assessment professional, trained by a federally accredited training provider.

Response actions may range from encapsulation to removal, depending upon the recommendations of the environmental specialist onsite. Response actions, themselves, should be carried out by licensed contractors, employing workers, certified for the work and trained by federally accredited training providers. The problem here is the Federal Government, it is not in the availability of workers and their ability to do the job.

The rest of this is in the record. Thank you.

[Testimony resumes on p. 278.]

[The prepared statement of Mr. Gorman follows:]

TESTIMONY OF
UNITED BROTHERHOOD OF CARPENTERS AND JOINERS OF AMERICA

Before Hippocrates penned his oath, he recognized the effects of lead poisoning in humans. Today the impact of lead as a deadly neurotoxin at levels that were, until recently, thought safe has pushed lead to the forefront of concerns unions, their members and our contractors have for their occupational environment.

Our 600,000 members face lead-based paint hazards both at work and at home, whether from on-the-job exposures, which in turn get carried home on our members' clothing, or simply from living in and renovating homes with leaded paint built before 1980.

The legacy of leaded paint is an inheritance of known, persistent and insidious health effects to children and working adults. Yet these health problems have been outweighed by a legislative and regulatory lethargy that one would think was caused by lead in the water our policymakers drink.

What the science tells us about leaded paint's pervasive health effects, you already know and have heard more about today:

- 57 million houses are filled with leaded paint. These include four million homes with high levels of chipped and granular lead paint and leaded soil deemed by HUD to be a "priority hazard."
- children and adults in the millions are at risk of the full range of known impacts -- from impairments in

growth, gestation periods, and I.Q. levels, to the more obvious and life-threatening lead encephalopathy, with bone, central nervous system and kidney degradation.

The CDC recently found that even moderate blood lead levels can cause the young increased dropout rates, difficulties with reading and decreased abilities to learn as they get older. The impacts and costs to society are obvious and compelling, even if not wholly quantifiable.

This Subcommittee also should know the extreme effects of lead's toxicity on working men and women, particularly those in the construction trades. Again, published research tells a story of workers in the construction industry at a greater risk than any other category of workers to exposures to, and retained blood lead levels above, 70 micrograms per deciliter. A 1989 article published in the CDC's Morbidity and Mortality Weekly Report indicates that 34% of those with blood lead levels exceeding 70 micrograms per deciliter came from workers in the construction trades. According to the CDC, levels above 70 indicate a medical emergency with hospitalization and painful therapy generally required.

As that 1989 report also indicated, the primary means of absorbing lead is through inhalation of lead dust and fumes.

According to another CDC study of lead-poisoned bridge demolition workers in Massachusetts, clinical manifestations of occupational lead poisoning usually occur when blood lead levels exceed 40 micrograms per deciliter. Symptoms vary greatly in severity and include abdominal pain, anorexia, fatigue, arthralgia, headaches, irritability, depression, impotence, anemia and hyperuricemia. The same report noted that workers in construction and demolition work involving cutting through lead-coated metal structures, the repair and disassembling of ships, roofing, the dismantling of subway lines, and the demolition and stripping of paint from bridges have all demonstrated high concentrations of lead fumes and lead exposures. Ironically, as all CDC reports published in the last three years have been quick to point out, the very occupational exposures most likely to occur, namely those of workers in the construction industry, remain the least protected. While OSHA maintains a general industry standard of 50 micrograms per deciliter of lead in the bloodstream, the construction OSHA standard remains at a staggering 200 micrograms.

Carpenters in particular have an interest in reducing and controlling exposures to lead from both occupational and public health perspectives. As the union with the largest construction membership in North America, our members face lead hazards in a wide range of their activities. For example, carpenters assemble and work around the scaffolding used by other tradesmen to strip paint from bridges using acetylene torches or sand blasting. In order to protect and safeguard the general public heavy curtains are often draped over the scaffolding to prevent the leaded dust from escaping into the air. However, workers within those enclosures are therefore exposed to far higher levels of lead than they would otherwise be without such protective techniques. Currently, work practices which would control such exposures are simply nonexistent on most bridge repair sites.

Carpenters also perform substantial work in private and public housing. The union's traditional jurisdiction started with wood and has extended to substitutes that have come into vogue over the years. As a result interior systems work is jurisdiction which traditionally supports a full third of our construction membership.

Lead-based paint on windows, doors, molding, ceilings, walls, and floors, particularly in circumstances where removal and replacement is under way, therefore constitutes a significant potential health hazard for our members. The Union through its joint labor-management National Health & Safety Fund has introduced training for lead abatement workers and contractors and is working to introduce lead screening into its medical screening and surveillance programs across the country.

We do not have, as yet, comprehensive data to cite to the Subcommittee concerning carpenter exposures. Some anecdotal evidence, however, supports our concern. We recently introduced lead screening as a component of our prequalification for workers taking our 40-hour hazardous waste worker training course. Two of the first 20 workers to be put through the screening had elevated blood lead levels above 50 micrograms per deciliter, and this was for a class primarily targeted to business agents and other local union leaders, not to workers whom we might expect to have greater frequency of exposure to leaded paint. We will be surveying our labor-management health and welfare funds to determine the existence of additional illness data.

While carpenters also work in shipyards and in factories both as contract and as production and maintenance workers (for example, a 13,000 member local union in California works exclusively for Hughes Tool), we believe our members highest exposures are on renovation and remodeling projects.

However, as I mentioned, we are operating in the blind simply because occupational exposures, while known to exist, have not been methodically assembled and analyzed. Similarly, insufficient biological and medical monitoring has been done on workers acting as the lead-carrying equivalent of "Typhoid Marys" when carrying leaded dust home to their families on their work clothes.

What is known, therefore, are the toxic effects of high and even moderate blood-lead levels. What is not known, and what must be included in any comprehensive approach to this environmental and occupational problem, is how widespread the occupational exposures are and what level of worker protection will adequately protect both workers and their families from continued exposures. One well-respected health scientist, Dr. Philip Landregan, has recently suggested that medical removal of workers is justified at levels above 20 ug/dl, with return to work only when levels fall below 10. But such work and occupational study remains.

Twenty years ago Congress passed the OSHA Act, legislation designed to eliminate preventable injuries and illnesses in the workplace. Enactment of environmental laws underlying the Environmental Protection Agency were also expected to work in tandem with the OSH Act to eliminate toxic emissions and effluents as public health threats. Lead-based paint has been banned from use in homes in over a dozen states since the 1960's and been banned federally since 1977. In addition, the Lead-Based Paint Poisoning Prevention Act of 1971, 42 U.S.C. § 4801, et seq., has generally failed in the enforcement of provisions designed to identify and treat those who are poisoned by lead, to remove lead-based paint from federal housing and to prohibit its use in areas accessible to children. In 1988, the Lead Contamination Control Act was enacted to reduce lead in drinking water.

These statutes have accomplished small steps, despite lofty aims. Nevertheless, in 1991 the primary source of continuing exposure -- lead-based paint in buildings -- remains an untreated, though preventable risk.

Recommendations

The Subcommittee has requested that we provide specific proposals for minimizing this risk to workers and children most susceptible to the dangers associated with lead-based paint. Let me turn to those now.

We propose here a wide variety of solutions for your consideration, ones we think treat the problem as a whole and not simply as the sum of discrete parts.

1. In order to know the full extent of chipped and peeling lead-based paint, lead paint dust and leaded soil, we must provide state health departments and other entities the wherewithal to assess both the hazard and the effects of leaded paint on the worker and the general population. It is therefore necessary, in our view, to give homeowners, landlords, and other building owners both the opportunity and responsibility to determine whether

their respective buildings contain lead-based paint and to assess whether that paint is in a hazardous condition. Adequate legislation must therefore be enacted which will provide for inspections and notification to homeowners and tenants of leaded paint in all dwellings built before 1980. Just as communities have enacted right-to-know statutes concerning their exposures to public health risks from outdoor environmental contaminants, so too should Congress finally tackle the health risks associated with indoor lead-based paint by going to the source and learning the condition of the soil and paint in and around homes. Such legislation could set priorities for those buildings where the greatest potential hazards exist: federal public and military housing first, followed by large multi-unit apartment and condominium dwellings, and later, smaller multiple dwellings and single family homes.

Legislation could also encourage or perhaps require restrictions on transfers of property unless or until a lead inspection has been performed and the dwelling is either lead-free or with leaded paint certified to be in encapsulated form.

2. For those dwellings where lead-based paint is found in deteriorated condition, or where high lead dust levels exist, an appropriate remedial response action should be recommended by a certified environmental assessment professional trained by a federally accredited training provider. Response actions may range from encapsulation to removal, depending upon the recommendations of the certified environmental specialist on site. Response actions themselves should be carried out by licensed contractors employing workers certified for the work and trained by federally accredited training providers.

3. Legislation mandating inspection, notification and response actions are ineffective, however, without the necessary funding in place to achieve the goal of risk-free housing. The Carpenters endorse the Environmental Defense Fund's recommendation in its March 1990 report entitled "Legacy of Lead ..."of an excise tax on lead production. Such funding should be designed effectively to implement the policies discussed above. Additional incentives could come in the form of tax credits for homeown-

ers who undertake lead abatement as a result of restrictions placed on the rights of property transfer. We recognize that it is simply impossible for homeowners to bear the cost of abating lead without some financial relief.

4. Any lead control program enacted must contend with the insurance marketplace and with insurer refusals, as in Massachusetts, to offer homeowner policies which might be construed as covering lead paint control efforts. Massachusetts has called on insurers which provide insurance in the state to offer separate policies for homeowners seeking lead paint pollution coverage. The results of this effort are undetermined. As a last resort, the federal government could offer insurance coverage, as with the federal flood insurance program now offered through the Federal Emergency Management Administration, if needed by affected building owners.

5. Currently, only 15 states maintain blood lead registries for their state health departments. In states that have them, some blood lead registries focus on children and some only on adults. Differ-

ent states which have these registries set different standards for medical followup. We believe blood-lead surveillance must be established in all 50 states and additional funding must be provided for occupational and environmental health clinics to utilize and share data with state health department registries.

In addition, only blood-lead levels higher than 70 ug/dl are currently followed up in most states. However, blood-lead levels at greater than 50 micrograms per deciliter indicate long-term health effects such as renal disease, hypertension, low sperm counts and other long-term impacts. Accordingly, while surveillances should begin at the lowest scientifically acceptable level for blood-lead, followup must begin at a minimum, for adults showing blood-lead levels higher than 50 ug/dl. Lead registries should also require reporting at the lowest blood-lead levels known to cause cognitive and other health effects for children.

6. Joint labor-management trust funds have been established by most unions and their contractors in the construction trades. They exist to improve the length and quality of their members' lives. It is

critical that these jointly trusteed funds be given the opportunity to utilize federal and state resources to assist in monitoring the largest segments of workers known to have health effects from workplace exposures. We therefore recommend that joint studies be conducted using biological and medical monitoring techniques and that blood-lead screenings become an integral part of the physical screening performed on most construction workers today. This legislation must drive such health protections.

7. Similarly, this legislation should study the health effects on families of workers exposed to lead dust to see how much lead gets brought home on the worker's clothing.

8. We also call upon Congress to enact legislation which: improves work practices and engineering controls over lead-based paint, provides for medical removal for workers from lead-contaminated work-places when lead levels exceed the lowest scientifically acceptable limit for such exposures, relies on strong respirator programs where engineering controls are incapable of achieving appro-

priately low levels of lead and provides for vigorous enforcement efforts by funding additional inspectors for EPA and OSHA.

While we recognize it is not necessarily within this Subcommittee's purview, in the face of unbearable delay in OSHA's setting of a construction lead standard, we encourage Congress to mandate lower lead exposure levels. In addition, NIOSH must be funded to help implement the kinds of medical surveillance studies I have called for earlier.

9. Finally, any comprehensive response action program must include significant funding for training of lead abatement and maintenance workers since these are the workers who will be called upon to knowingly confront this hazard. I recognize that Congress appropriated approximately $1.5 million last year to start up such training programs. However, with estimates of the amount of work to be performed varying from 12 to 500 billion dollars, depending on who one listens to, the numbers of workers to be trained and the support system generated simply cannot effectively function with the limited resources currently in place. Let there be no mis-

BEST COPY AVAILABLE

> take about this, adequate numbers of workers will be trained to safely eliminate this hazard. However, training in minimizing exposures to lead and studies to develop effective work practices and engineering controls must occur in a far larger context than currently funding levels provide.

We are most grateful to the Subcommittee for undertaking the completion of the work begun 20 years ago to eliminate lead as a hazard in the environment and in the nation's workplaces. A comprehensive program designed to eliminate the greatest exposure of children and adults to lead must encompass the problem of leaded paint. This piece of the legislative puzzle will be the largest and most important Congress has ever considered. In the coming months we expect to hear painful cries from lead paint manufacturers and other lead producers, howls of disbelief from real estate interests and general wailing and gnashing of teeth from those who oppose health and environmental progress at the expense of profit margins. Carefully drawn legislation will not meet expected dire forecasts if reasonable minds are brought to bear on the subject.

More importantly, the hard benefits which will accrue from eliminating hazardous leaded paint should have an appreciable impact not only on the health of all Americans and the quality of their lives, but on the competitiveness and the literal intelligence of American workers for generations to come. Then and only then will we be able to say with pride that we delayed no longer in eradicating a man-made scourge spanning two millennia.

We thank the Subcommittee and particularly you, Chairman Waxman, for focusing attention on this critical problem.

Mr. **Waxman**. Thank you, Mr. Gorman.
Mr. Wickser.

STATEMENT BY JAMES S. WICKSER

Mr. **Wickser**. Good afternoon, Mr. Chairman.

My name is James S. Wickser, assistant general manager of water for the Los Angeles Department of Water and Power.

I also serve on the board of directors of the Association of Metropolitan Water Agencies and am here today to speak on the association's behalf as well as the American Waterworks Association, National Association of Water Companies, and the National Rural Water Association. Together, the members of these organizations provide drinking water to the vast majority of the people in this country, over 200 million individuals.

Mr. Chairman, it is a pleasure to be here today to discuss the issue of lead in drinking water. I will summarize our written statement and would like to request that the full text of the statement be included in the hearing record.

It is well documented that children are particularly susceptible to the lead toxic effects. We recognize, as does everyone else here today, the future of our country is dependent on the health and mental abilities of our children. Our statement today will focus on the practical aspects of the problem of lead in drinking water.

For the record, Mr. Chairman, water suppliers are not polluters. On the contrary, we are committed to working with others to solve this problem.

Mr. Chairman, lead is different from other drinking water contaminants. Generally, contaminants occur in source waters such as lakes or rivers or wells. Drinking water supplies build and operate treatment facilities to remove those contaminants before delivering the water to the customer.

Technology is available for the removal of lead from source water and it is more than 95 percent effective. Lead, however, enters drinking water through plumbing systems and faucets and through lead service lines, goosenecks that connect them to the water distribution system.

Because of the contribution to lead by home plumbing, we support a process of, first, removing lead from source water, if it occurs, and second, a treatment technique to prevent or reduce lead problems within the home environment.

A treatment technique approach, as we understand it, is basically the direction EPA has taken in the development of the lead regulation and is one we can support in light of the contribution of lead to drinking from the home plumbing.

There has been much discussion that an enforceable maximum contaminant level, MCL, at the enduser's tap of 5 micrograin per liter should be established for lead. It is our position, Mr. Chairman, that an MCL at the enduser's tap places water suppliers in the position of being legally responsible for plumbing and fixtures that we simply do not own or control.

More importantly, we believe a standard at the tap is not as protective of public health as the process I have outlined, because it gives homeowners a false sense of security in the expectation that water suppliers can control all aspects of the situation and then, therefore, take of the problem.

Mr. Chairman, water suppliers cannot eliminate lead in drinking water by themselves, but we can help to reduce the amount of lead reaching the homeowner.

Water suppliers are clearly responsible and can treat and control source water at treatment facilities. We can develop and implement balanced corrosion control treatment in order to help minimize leaching lead, and we can support an MCL within the water supply distribution system.

In recognition of the importance of protecting public health and the importance of addressing the problem of lead in our drinking water after it leaves the control of the water supplier, we support diagnostic testing for lead in single family residences. The results of such home tap sampling would be used to determine further actions by the water supplier, public health authorities, and State agents.

Manufacturers and distributors of plumbing fixtures also have a clear responsibility in this area. Brass faucets and fixtures which leach lead into the drinking water should be eliminated.

Homeowners, however, also have a clear responsibility if lead in drinking water is to be reduced or eliminated. Homeowners can reduce their risk directly by not using lead solder and flux in home repairs and by the simple act of flushing water that has remained in contact with home plumbing and fixtures before taking water to drink.

As you can see, control and responsibility varies, making joint efforts by all parties essential. If there is one message we would hope to convey to the subcommittee, it is that everyone has a part to play in eliminating lead in drinking water and than an MCL at the tap implies that only the water supplier has a part.

Members of the subcommittee, even if the water supplier delivers lead-free water to the consumer, we cannot guarantee lead-free water at that tap. There are avenues of lead contamination which are outside our control, and an MCL at the tap makes water suppliers legally responsible for something they do not control and cannot achieve.

Mr. Chairman, that concludes my remarks. I will be pleased to answer any questions. Thank you.

[The prepared statement of Mr. Wickser follows:]

Association of Metropolitan Water Agencies
Before the Subcommittee on Health and the Environment
Committee on Energy and Commerce
U. S. House of Representatives

Statement Presented April 25, 1991
on behalf of
Association of Metropolitan Water Agencies
American Water Works Association
National Association of Water Companies
National Rural Water Association

Good morning Mr. Chairman. My name is James S. Wickser and I serve as the Assistant General Manager of Water of the Los Angeles Department of Water and Power. I also serve on the Board of Directors of the Association of Metropolitan Water Agencies and I am here today to speak on the Association's behalf as well as the American Water Works Association, National Association of Water Companies and the National Rural Water Association.

The Association of Metropolitan Water Agencies (AMWA) is a non-profit organization of the directors and managers of the nation's large municipal water supply systems. Our membership includes cities from Los Angeles to Tampa, New York to Portland and Philadelphia to Houston. AMWA members provide safe, high quality drinking water directly to over 75 million people and indirectly to an even greater percentage of the population through wholesale supply. All AMWA agencies are public water supply systems under the Safe Drinking Water Act.

Members of AMWA, the American Water Works Association (AWWA), the National Association of Water Companies (NAWC), and the National Rural Water Association (NRWA) together provide drinking water to the majority of people in this country, over 200 million.

Mr. Chairman, it is a pleasure for me to be here to discuss the issue of reducing lead contamination in our environment but particularly lead in drinking water. Lead in the environment is an important issue that has been subjected to a great deal of study and discussion by the water supply community, particularly over the past few years.

I want to acknowledge, at the outset, that this is not the first time AMWA has testified before this Subcommittee on lead in drinking water. In fact, the first time was in December of 1987. Mr. Chairman, we understand the Subcommittee's frustration with the pace at which a National Primary Drinking Water Regulation for lead has been developed. However, as we understand it, EPA is expected to promulgate a final lead rule by the end of April.

Lead in Drinking Water

Since our time this morning is short, my statement will focus on the issue of lead in drinking water in addition to the contribution of lead in drinking water from plumbing products.

A numerical standard (maximum contaminant level - MCL) or treatment technique are the two possible approaches for regulation of drinking water contaminants provided for under the Safe Drinking Water Act. The water supply community has supported an MCL for lead provided that compliance with the standard be applied within the distribution system which is under the control of the supplier. The problem with lead contamination, however, is that much of it comes from individual home plumbing, an area obviously outside of the water supplier's control.

Because of the contribution of lead by home plumbing, we support a two step process of first removing lead from source waters if it occurs, and second, a treatment technique - optimizing corrosion control - to prevent or reduce lead problems within the home environment. A treatment technique approach, as we understand it, is basically the direction that EPA has taken in the development of a lead regulation and, is one that we support in light of the contribution of lead to drinking water from home plumbing.

Members of the Subcommittee, lead is different from other drinking water contaminants. Contaminants generally occur in water sources such as a lake, river or well, and drinking water suppliers build and operate treatment facilities to remove those contaminants before delivery of the water to consumers through a distribution system. When lead occurs in source waters it can be removed at the treatment plant by normal and well known best available technologies (BAT) including coagulation and lime softening which are more than 95 percent effective in its removal. Other methods include ion exchange and membrane processes.

If source water were the only way lead could enter drinking water, such action would be sufficient by itself to protect public health as it is for the majority of regulated contaminants. For most contaminants, samples taken at the point of delivery and inside a home would yield the same results. Unfortunately, the major source of lead in drinking water is not source water. It is lead that leaches from plumbing systems and faucets in private homes, multi-family residences, commercial and industrial facilities, and from the lead service lines and goosenecks which connect them to the water distribution system.

Water suppliers are clearly responsible and can treat and control source water at treatment facilities. We can develop and implement balanced corrosion control treatment in order to help to minimize the leaching of lead. Water suppliers along with public health authorities can also help to educate the public on the problems of lead.

In recognition of the importance of protecting public health and of addressing the importance of lead that can enter drinking water after it leaves the control of the water supplier, we support diagnostic testing for lead in single-family residences. Such testing would involve first-draw samples from single-family residences representative of the service area, taking into consideration building age, location, type, service connection characteristics, demographics, and water consumption. The results of such home tap sampling would be used to determine further actions by the water supplier, public health authorities, and state primacy agents including corrosion control treatment and public education programs if appropriate.

Manufacturers and distributors of plumbing fixtures also have clear responsibilities in this area if lead in drinking water is to be reduced or eliminated. Elimination of brass faucets and fixtures which leach lead in drinking water can greatly reduce the amount of lead in drinking water.

Homeowners, however, also have clear responsibilities if lead in drinking water is to be reduced or eliminated. Homeowners can reduce their risks directly by the simple act of flushing water that has remained in contact with home plumbing and fixtures before taking water to drink. Today, in many areas of the country, but most acutely in California, water conservation is a high priority. Homeowners, however, can reduce lead in drinking water by not wasting water but by changing use patterns. For example, water that is flushed from a kitchen tap can be collected for use on plants or in household washing. In the morning, a shower can be taken, or a toilet flushed, before coffee is made or a glass of water ingested.

Due to actions by this Subcommittee and other members of Congress, the use of lead solder and flux in plumbing is illegal. The lead ban must be enforced and lead solder and flux clearly labelled, so that homeowners who must ultimately make the decision not to use these products, can make the right choice.

As you can see, control and responsibility varies making joint efforts by all parties essential. A key part of any joint effort must be public education which the water supply community strongly supports. Water suppliers, working in cooperation with local and state public health officials and others, can help deliver the needed message on the dangers of lead and the part everyone has to play in reducing risks.

MCL at the Tap

There has been much discussion that an enforceable maximum contaminant level (MCL) "at the end user's tap" of 5 micrograms per liter should be established for lead. It is our position, Mr. Chairman, that an MCL at the "end user's tap" (if defined for example as the tap at your kitchen sink) places water suppliers in a position of being legally responsible for plumbing and fixtures that we simply do not own or control. Equally important, we believe, that a standard at the tap is not as protective of public health as the two step approach I have outlined, because it gives homeowners a false sense of security in the expectation that the water supplier can and will take care of the problem.

Setting an MCL at the end user's tap would also have the effect of holding water suppliers legally responsible under the Safe Drinking Water Act for not only things they do not and cannot control but also the mistakes, omissions, and even illegal activities of others. For example:

- The use of lead solder in drinking water plumbing has been illegal since 1986. Its use continues.
- Studies have shown that brass faucets holding lead free water for an 8 hour period can leach lead into the water at levels of 10 micrograms per liter and higher.
- Improper grounding of telephone and electrical circuits in homes to water lines can increase corrosion leading to increased lead levels in the water.
- Installation of dissimilar metals in plumbing systems can lead to galvanic action increasing lead levels.

These types of problems cannot be solved by an MCL at the tap. Each of these, by themselves or in combination, can cause lead levels in excess of 5, 15, or even the present lead standard of 50 micrograms per liter. As this Subcommittee, and others in the Congress have begun to recognize, improved regulation of lead containing products, public education initiatives, and increased enforcement of existing lead ban regulations are ways to address this problem, not only in drinking water, but also for the other exposure media.

Local Water Supplier Initiatives

Mr. Chairman, as I mentioned before, I understand your frustration with the length of time it has taken to develop the lead regulation. I would like to assure you that the drinking water community has not been idle during that period. I would like to share with you some of the efforts the City of Los Angeles has made to address the lead issue, and mention a few other examples from around the country.

Beginning in the early 1980's, Los Angeles began pilot corrosion control testing. This effort was targeted primarily at control of corrosion in pipes and mains, but the experience served us well as the threats of lead to public health came into focus in the mid 80's. Since that time, the city has undertaken twelve major studies to assess various aspects of the problem. An early study pinpointed the modifications to the city plumbing code necessary to ensure maximum public protection. The code was updated in line with these recommendations.

The Lead Contamination Control Act addressed lead in water coolers often found in schools. The Department of Water and Power assisted public schools in testing for lead, and where high lead levels were found in drinking water, recommended changes in maintenance procedures to control the problem. Our recommendations have been adopted by the schools. The Safe Drinking Water Act required lead notification to drinking water consumers. In addition to that notification we highlighted lead in our annual water quality report sent to every customer.

The remainder of the studies have focused on how best to reduce corrosion. We have already improved one corrosion control station as a result of those studies, and we are preparing to construct a major new facility in the next two years. One key conclusion of our studies is that corrosion is very complex and can vary significantly seasonally and geographically. Also, a corrosion inhibitor chemical may reduce corrosion for one source water but may increase it for another water source. In our system, one area could get water from either source, or a mixture of the two, depending upon water supply conditions. We've taken the time, and it has been five years of research, to make sure that what we do will better the situation and not make it worse.

Louisville Water Company has adopted an aggressive main replacement and rehabilitation program that includes replacement of an average of 1375 lead service lines under their control per year. They have also assisted schools, performing tests in 251. Interestingly, the only extremely high lead levels found were traceable to water fountains identified by EPA as the direct result of legislation initiated by this Subcommittee. These water fountains have since been replaced by the schools. Louisville has expanded their efforts, and is now testing day care centers. Other lead efforts include a blood-lead level study undertaken in conjunction with the Centers for Disease Control, and adjustment of pH and alkalinity to control lead leaching.

South Central Connecticut Regional Water Authority has undertaken some innovative initiatives which they are sharing with the drinking water community. In addition to modifying their corrosion control program to reduce lead levels, they have made available to all area residents (including those drawing water from their own wells) a lead monitoring program. The authority will test for first draw lead levels upon request to help homeowner's identify any problems with their home system. Like Los Angeles and Louisville, South Central Connecticut conducted school testing, evaluating over 1200 samples from 127 area schools including those receiving water from other sources. One major problem South Central Connecticut found was that the minimal use of fountains in schools lead to very long contact times of water with plumbing and fixtures. This was particularly true of fountains in remote, inaccessible, or dead end portions of the school plumbing system. This discovery lead to a joint effort with local health and Board of Education officials to establish a Water Rangers Program at elementary schools. Water Rangers are school children responsible for flushing school water fountains each day before use.

The City of Seattle has been at the forefront of corrosion control for years. A corrosion control study completed in 1978 called for water treatment to increase pH and alkalinity and to ban the use of solders containing lead. Design of a treatment facility was started the following year. Within two years the city plumbing code was modified to ban the use of lead solder, making Seattle the first government entity in the country to do so. Within three years new treatment facilities were in operation. Seattle has also assisted schools with drinking fountain concerns.

The common thread in the few examples I have given and in others around the country is that participation and action by water suppliers, public health authorities, school boards, drinking water consumers, plumbers, plumbing and fixture manufacturers, and others is necessary to reduce risks from lead.

Summary and Recommendations

If there is one message we would hope to convey to the Subcommittee it is that everyone has a part to play, and an MCL at the tap implies that only water suppliers have a part. Members of the Subcommittee, even if the water supplier delivers lead free water to the consumer, we can not guarantee lead free water at the tap. There are avenues of lead contamination which are outside of our control, and an MCL at the tap of 5 micrograms per liter makes water suppliers legally responsible for things we do not control and cannot achieve.

We believe that any program to control lead in drinking water must include working in cooperation with local public health officials and other appropriate parties. Through coordinated activities, a comprehensive education program to inform the public about the health risks of lead exposure from all sources and the means by which those risks can be reduced, can be developed and implemented.

We support the goal of reducing the exposure of the population to harmful levels of lead, from whatever sources. We commend the Congress for its past actions including removal of lead from gasoline, barring lead use in house paint, excluding the use of lead solder and pipes in public drinking water systems, encouraging the phaseout of solder in food cans, and promoting public awareness of the dangers of lead. These actions have had major positive health effects over the past ten years.

The water supply community strongly supports cross-media lead reduction and control strategies similar to those developed by the U.S. Environmental Protection Agency. We also support the Centers for Disease Control's screening program and lead clinic initiatives. Such integrated approaches are critical to public health protection since exposure to lead comes from multiple sources including air, soil, dust, food and water.

We support appropriate research or other action such as product testing which will significantly reduce the leaching of lead from brass faucets and fixtures, and a requirement that public education material concerning flushing of fixtures before drawing water for consumption, and the health effects of lead be packaged with each brass faucet until minimal leaching levels can be reached. Mr. Chairman, research has shown that the degree of leaching from brass faucets varies greatly. We recommend that the EPA be given authority to test and ban plumbing fixtures that contribute lead or any other contaminant at harmful levels to drinking water. We also support efforts to require the labeling of products with their lead content and any associated usage restrictions so that consumers can make informed choices.

In the area of health effects research, the water supply community vigorously supports efforts to require the Department of Health and Human Services, the CDC and EPA to undertake a long-term research project to study the sources of lead exposure in children who exhibit elevated blood lead levels including the contribution to lead body burden from drinking water.

Finally, AMWA recommends that Congress consider a tax credit for homeowners to help pay for replacement of lead plumbing. As I mentioned earlier in some detail, much of the lead found in drinking water comes from inside the house and, in some instances, the cost of remediation will be significant.

Mr. Chairman, this concludes my remarks. I would be pleased to answer any questions you may have.

Mr. **Waxman**. Thank you, Mr. Wickser.

Mr. Olson.

STATEMENT BY ERIK D. OLSON

Mr. **Olson**. Thank you, Mr. Chairman.

It has been a long day of hearings, and we appreciate this opportunity to testify this morning.

I am Erik Olson, counsel with the National Wildlife Federation, and we would like to express our appreciation for the opportunity to testify and commend you, in particular, for your leadership on the lead issue.

We support broad and comprehensive controls on lead exposure, but I wanted to focus primarily on drinking water exposure today, and I would like to associate myself with the comments of Mr. Silbergeld, who said the problem is not technical or scientific; the problem is one of political will. We just have not had the will to crack down on this.

Lead contamination in the indoor environment, obviously, is not a new problem. It is something that has been with us for a long time, but it remains a major public health threat.

Lead paint and dust and lead in drinking water, according to EPA's studies, are the major indoor sources of lead exposure today, but in the face of a steadily accumulating body of evidence that we have heard a lot about today, lead's effects are clearly continuing, and EPA has been extraordinarily slow in addressing what it could address, really, with the stroke of a pen; that is, lead in drinking water.

It has full statutory authority. It knows it is a problem. It has known for a decade and a half that it is a problem, and here we are today, 15 years after everyone knew this should be addressed, and you can go back in the hearing records over a decade ago and find almost the same testimony.

We are redebating everything all over again, and I hope, in the year 2000, we do not have a hearing before this subcommittee saying gosh, lead in drinking water sure is a problem, let us do something about it.

EPA is expected to announce their rules, as you mentioned, later this week regarding lead in drinking water, but this is not going to solve the problem for the 42 million or more Americans who are getting too much lead in their water.

The new rules, as we have heard, will totally eliminate any maximum contaminant level, which means, if we take an example of, say, a parent in Boston that has lead levels of 80 parts per billion in their drinking water, what is their remedy going to be under this rule?

Well, the day that this rule becomes effective, they will have no remedy until the entire corrosion control program goes into effect and until, ultimately, that corrosion control program fails and we have got 15 more years, perhaps, to wait for the lead pipes to be pulled.

We understand that OMB has even rejected the opportunity to pull lead pipes if corrosion control does not work and that, in fact, we are not going to have even that measure of protection, this despite the fact that the American Waterworks Association has supported pulling out lead service lines if corrosion control does not work.

It is hard for me to fathom OMB's thinking on this issue.

All of the studies that have been done indicate that the benefits of reducing lead in drinking water are phenomenal and the costs are tiny.

For example, an MCL of 10 parts per billion of lead would result in annual benefits of $1 billion to $6.3 billion just in health benefits. The cost would be only $350 million per year. This does not even consider the savings from corrosion reduction and less maintenance requirements.

In addition, there are loopholes in the Safe Drinking Water Act and in the Lead Contamination Control Act. We heard EPA testify this morning that lead pipes have been banned. Well, that is not the case. Lead pipes containing more than 8 percent lead have been banned and lead fixtures, but in fact, we continue to have lead pipes and lead fixtures being sold across the country.

The Inspector General of EPA recently issued a report showing that, all over, where they looked, they were finding lead pipes and lead solder on sale in plumbing supply houses. What has happened? We have basically had EPA asleep at the switch.

Congress should remedy this inadequate Government implementation by adopting a national ban on all lead plumbing, fittings, fixtures, and solder and by imposing a Federal MCL of something in the neighborhood of 5 parts per billion of lead and then an additional maximum on the first flow of water that comes out of the tap immediately after you turn it on.

I will not belabor the point of the health effects of lead, but I wanted to emphasize something Dr. Graef had said this morning, which is that their studies are indicating that 20 percent of the infants that come in for lead poisoning treatment got the contamination from the drinking water that was used to put into the formula.

So, although, certainly, lead in paint is a major cause of acute poisoning, it appears that lead in drinking water is also a cause of acute poisoning in some children. Despite this evidence, again OMB is impeding and delaying EPA's actions, and EPA itself has not exactly been very swift about taking many of the reductions that are necessary.

EPA's own data indicate that something in the neighborhood of a quarter of a million children are known to have been exposed to such high levels in their drinking water that they are impaired.

So, in summary, we urge the subcommittee to move forward with legislation that would ban all lead in plumbing and fixtures and that would adopt a national maximum contaminant level.

[Testimony resumes on p. 301.]

[The prepared statement of Mr. Olson follows:]

TESTIMONY OF

ERIK D. OLSON

NATIONAL WILDLIFE FEDERATION

Chairman Waxman and distinguished members of the Subcommittee, I am Erik D. Olson, Counsel for the Environmental Quality Division of the National Wildlife Federation (hereinafter referred to as "NWF" or the "Federation"). The Federation is the nation's largest citizen environmental organization, with over 5.5 million members and supporters nationwide. NWF carries out a broad array of education and advocacy programs intended to promote the protection of the environment and public health. We appreciate this opportunity to testify regarding the important issue of lead contamination in the indoor environment, and will focus our comments primarily upon lead in drinking water.

OVERVIEW AND SUMMARY OF THE LEAD PROBLEM

Lead contamination of the indoor environment is not a new problem. Shockingly, however, centuries after lead was recognized as an important poison, it remains a widespread and sometimes acute public health threat. Lead paint and dust, and lead in drinking water are the major indoor sources of lead exposure today.[1] Researchers recently have documented that decreased IQ and other problems are caused by low level lead exposures at concentrations which were thought to be safe just a few years ago.

Yet in the face of this and other evidence, EPA has been extremely slow to redress one of the most readily controlled sources of lead exposure: lead in drinking water. EPA is expected to announce in the next few days, under a court-imposed deadline, new rules for lead in drinking water. These rules clearly will be inadequate to solve the lead-contaminated drinking water problem. The rules will cause even further delays in public health protection for over 42 million Americans who drink water containing excessive lead levels.[2]

---

[1] U.S. EPA, Strategy for Reducing Lead Exposures, ("Final Draft," September 26, 1990).

EPA's new rules will eliminate the current "at-the-tap" standard of 50 parts per billion Maximum Contaminant Level (MCL) for lead. Instead, the new rules will replace this enforceable standard with a requirement that each PWS implement a state-issued "optimal corrosion control" plan, if the PWS exceeds an "action level" of 15 ppb in more than 10 percent of the taps tested.[3] EPA, and citizens who are supplied with lead contaminated water, likely will find it difficult or impossible to enforce this rule. There will no longer be an enforceable at-the-tap standard, and there will be no national optimal corrosion control program for EPA and citizens to enforce. The new rules also will unnecessarily delay the reduction or elimination of lead in drinking water for several years, and in some cases for decades.

This approach was adopted even though EPA analyses indicate that the annual health benefits (such as reduced medical treatment and less remedial education for lead-poisoned children) from a serious reduction in drinking water lead levels far outweigh the costs of such reductions. For example, EPA data indicate that the adoption of an MCL of 10 parts per billion lead will yield health benefits ranging from $1 billion to $6.3 billion, and that the costs of implementing this MCL would be just $350 million per year.[4] These costs do not include the hundreds of millions of dollars that would be saved by reducing pipe corrosion and reduced distribution system maintenance.[5] Thus, EPA's new approach will unnecessarily permit at least one more generation of American children to suffer from the toxic effects of lead in drinking water.

---

[2] EPA, OPPE, Reducing Lead in Drinking Water: A Benefit Analysis, (December, 1986)(attached).

[3] The description of the EPA lead rule is based upon EPA's presentation regarding the rule delivered to the Association of Metropolitan Water Authorities in October, 1990 (attached).

In addition, loopholes in the Safe Drinking Water Act and the Lead Contamination Control Act, and ineffective EPA and state implementation of those laws, permit continued sale and installation of lead-containing pipes, faucets, solder, and other fixtures that are used to supply drinking water. Congress should close these loopholes. Furthermore, Congress should remedy the inadequate government implementation of these laws by mandating a national ban on all lead plumbing, fittings, fixtures, and solder, and by imposing an MCL of 5 parts per billion lead, 10 parts per billion in first draw water (i.e. water that flows from the tap when it is first turned on after sitting overnight).

---

[4] EPA Office of Drinking Water, "Information Briefing: Final Rule for Lead and Copper in Drinking Water, for Deputy Administrator," (January 31, 1990)(attached).

[5] Ibid.

THE HEALTH EFFECTS OF LEAD EXPOSURE

Recent research indicates that lead in children's blood, at levels once thought to be safe, can cause neurological and behavioral problems, including decreased I.Q., reduced attention span, and impaired verbal and auditory capacity.[6] Children appear to be especially susceptible to problems caused by low level lead exposure. Children's bodies readily accumulate lead and are more vulnerable to certain toxic effects of this injurious metal.[7] There is mounting evidence that these neuropsychological impacts may be irreversible, persisting for many years after exposure, at least into young adulthood.[8] The Centers for Disease Control is expected to adjust its definition of lead poisoning from 25 micrograms of lead per deciliter of blood (25 ug/dl) to about 10 ug/dl, to reflect this rapidly accumulating recent evidence.[9]

---

[6] Needleman, H.L., and Gatsonis, C.A., "Low Level Lead Exposure and the IQ of Children: A Meta-Analysis of Modern Studies," Journal of the American Medical Association, Vol. 263, No. 5, pp. 673-78 (February 2, 1990); Needleman, H.L. et al., "Long Term Effects of Exposure to Low Doses of Lead in Childhood: An 11-Year Followup Report," New England Journal of Medicine, Vol. 322, No. 2, pp. 83-88 (January 11, 1990).

[7] Brett, S.M., and Wilcock, K.E., "A New Look at Lead: Does it Affect the Way Our Children Think and Behave?" ENVIRON Report (Winter 1991).

[8] Needleman, H.L. et al., "Long Term Effects of Exposure to Low Doses of Lead in Childhood: An 11-Year Followup Report," New England Journal of Medicine, Vol. 322, No. 2, pp. 83-88 (January 11, 1990).

[9] See, e.g., U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, "Minutes for the Second Meeting, Advisory Committee on Childhood Lead

Despite this clear evidence of the adverse health effects of lead exposure at low levels, the Office of Management and Budget has questioned even EPA's extremely modest efforts to begin thinking about reductions in lead exposure. This is a matter in which OMB has no expertise. OMB should not delay or encumber EPA actions intended to address the serious health threats posed by lead.

Lead in Drinking Water

One key source of lead exposure that could readily be controlled, but that has remained virtually unaddressed for decades, is lead in drinking water. Since the days of the Roman Empire, when many aqueducts were lined with lead, this highly malleable metal has been used to transmit drinking water. Lead contaminates many drinking water supplies when corrosive water leaches lead from pipes, solder, or other conduits. EPA estimates that over 42 million Americans drink water containing excessive lead levels.[10] The Centers for Disease Control has estimated that 6.6 million children of the ages 5-13 are potentially exposed to lead in their home drinking water supply.[11] In addition, EPA has estimated that about one quarter of a million children under six years old are intellectually or

---

Poisoning Prevention," (November 1-2, 1990).

[10] EPA, OPPE, Reducing Lead in Drinking Water: A Benefit Analysis, (December, 1986)

[11] CDC, Agency for Toxic Substances Disease Registry, The Nature and Extent of Lead Poisoning in Children in the United States: A Report to Congress, p. 8 (1988).

physically impaired because of excessive lead in their drinking water.[12]

Since EPA has substantially restricted the use of lead in gasoline and national blood lead levels have fallen, lead in drinking water has emerged as a leading continuing source of lead in Americans' blood stream. Relative to lead paint, few *acute* poisonings from lead in drinking water have been documented, although some cases have been reported. However, there is extremely widespread exposure to lead in drinking water, and EPA scientists estimate that *in the 1990's, drinking water lead contamination will account for approximately 50 percent of average national lead exposures and blood lead levels*.[13]

EPA's INACTION REGARDING LEAD IN DRINKING WATER

Sixteen years ago, EPA issued an MCL for lead of 50 parts per billion.[14] This standard has been widely recognized as inadequate to protect public health, as EPA itself has recognized in proposing an MCL Goal (a health-based protective standard) of zero lead and in proposing an action level of 15 ppb. Furthermore, EPA has applied this already extremely weak standard to "free flowing" water, allowing a public water system to test the water for lead after it has been allowed to flow for several minutes. Since the highest levels of lead generally occur within the first few minutes of the flow (because sitting water leaches lead from pipes and fixtures), EPA's interpretation of the rule obscures the significance of this issue by sweeping the lead problem under the rug. Running water for many minutes before using it also is an extremely wasteful use of a valuable resource already in short supply. It is clear, in any event, that few people allow their water to run for several minutes before using it for drinking water, coffee, or baby formula. This is part of the reason why 42 million or more Americans are getting too much lead in their drinking water.

---

[12] EPA Inspector General, Audit Report E1HWF9-03-0316-0100508: Report of Audit of the Lead in Drinking Water Program, p. 4 (September 28, 1990).

[13] Levin, R., M.R. Schock, and A. Marcus, "Exposure to Lead in U.S. Drinking Water," 1989 *Trace Substances in Environmental Health*, pp. 319-344 (ed. Hemphill, 1989).

[14] 40 C.F.R. section 141.11.

EPA repeatedly has promised that it will toughen its standard for lead in drinking water. In 1988, for example, EPA announced to this Subcommittee that reducing lead exposure through the adoption of a tough new drinking water rule "is among EPA's highest priorities" and that "we hope to promulgate the final rule by the end of the year [1988]."[15] Unfortunately, nearly three years later in 1991, this reduction still has not been promulgated. Moreover, the rule that EPA plans to adopt fails to address the problem and will cause many years of delays in protecting the public from lead-contaminated drinking water.

EPA's approach in the new lead rule is to completely eliminate any enforceable MCL for lead, and to instead adopt a "treatment technique." This directly violates section 1412 of the Safe Drinking Water Act, which requires EPA to adopt an MCL enforceable at the tap unless it is not feasible to measure the concentration of the substance in drinking water (as in the case of viruses). Only if it is not feasible to measure the contaminant in drinking water may a treatment technique be specified. EPA openly admits that it is feasible to measure lead in tap water, but refuses to issue an MCL, even though the Agency's internal analyses demonstrate that an MCL of 10 ppb is feasible.[16]

---

[15] Statement of Michael B. Cook, Director, EPA Office of Drinking Water, July 13, 1988, p. 11.

The new rule will require public water systems (PWSs) that exceed an "action level" of 15 ppb (in more than 10 percent of the taps required to be tested) to implement "optimal corrosion control" measures.[17] These corrosion control measures would be imposed by the states with minimal federal guidance. Thus, if a state fails to impose a corrosion control program for a PWS, or if it requires a PWS to implement an inadequate program, in most cases EPA and citizens would have little if any real recourse under the Safe Drinking Water Act, no matter how serious the lead contamination problem.[18] Furthermore, if a state-issued corrosion control plan theoretically is adequate, it is unclear what would happen if a PWS fails to comply with that state-issued plan. For example, it is not clear that EPA or citizens would be able to sue the PWS under the Safe Drinking Water Act to enforce compliance with the plan.

---

[16] Memo from Lawrence Jensen, Assistant Administrator for Water, "Level 1 Options Selection: Lead-Proposal of Maximum Contaminant Level Goals (MCLGs) and National Primary Drinking Water Regulations (NPDWRs)," (September 29, 1987); EPA Office of Drinking Water, "Information Briefing: Final Rule for Lead and Copper in Drinking Water, for Deputy Administrator," (January 31, 1990)(attached).

[17] EPA may require in the final rule that large water systems serving over 50,000 people would automatically have to provide "optimal corrosion control," but it is not clear whether this provision will be included in the final rule.

Another grave concern under the EPA rule is the substantial delay associated with achieving compliance. Water systems are given from five to nine and one-half years to demonstrate full compliance with the corrosion control program. In addition, if the corrosion control plan is not sufficient to reduce lead levels, PWSs apparently will be given up to 15 additional years to remove lead pipes from their distribution systems. Apparently, some members of the public may have to wait for nearly 25 years--until the year 2015--to be supplied with water that contains what EPA considers acceptable lead levels. We also understand that OMB has opposed even this very limited lead pipe replacement program, and that the provision may be deleted or weakened to address OMB's objections. This OMB position is particularly difficult to fathom since the benefits of removing lead service lines exceed the costs, and since even the water utility industry has publicly supported lead service line replacement if corrosion control is not working.

---

[18] A provision in the rule allowing EPA to review state corrosion control plans is so onerous and resource-intensive for EPA that it is unlikely to have a significant impact on EPA's ability to assure the adequacy of state corrosion control plans.

The rule generally requires a PWS to use corrosion control only if more that 10 percent of the tested taps exceed the "action level" of about 15 ppb.[19] The 15 ppb action level is not sufficiently protective of public health, particularly in light of recent CDC actions indicating that lead in blood at 10 ug/dl is an indication of lead toxicity. In addition, because of the way the action level will be applied (using a "90th percentile" rule), a substantial portion of a utility's customer base, up to 10 percent, may be served lead-contaminated water with no limit on the extent of exposure in those homes. This too is a direct violation of the Safe Drinking Water Act, which in sections 1401 and 1412 make it clear that all of a PWS's consumers are to be protected. Many thousands of children could be inadequately protected under EPA's action level.

In addition, the rule may include a provision enabling larger utilities to evade any additional requirements if they already have an effective corrosion control program. This raises crucial legal questions and may open the door to a Pandora's box of demands for exceptions which eviscerate the rule.

Rather than twisting the intent of the Safe Drinking Water Act, EPA should adopt an MCL of 5 ppb in free flowing water, with a 10 ppb MCL for first draw water. This standard is readily achievable, easy to enforce, and is more protective of public health than EPA's current approach. Congress should swiftly adopt such a standard through legislation if EPA promulgates the standard embodied in this rule.

---

[19] As noted earlier, the final rule may require larger utilities serving over 50,000 customers to use corrosion control without applying the action level test.

In addition to mandating this MCL, Congress should close the loopholes in the Safe Drinking Water Act and the Lead Contamination Control Act that allow lead-containing pipe and lead fittings to remain on the market. Specifically, the eight percent maximum lead content limit in fittings and pipes, and 0.2 percent limit on lead in solder, which are applicable to plumbing connected to PWSs (pursuant to section 1417 of the Safe Drinking Water Act), should be reduced to zero percent lead. EPA investigators have found that lead-free pipe and fittings are currently feasible to manufacture, so a zero standard could be quickly phased-in. Lead solder also should be banned from retail sale and from all plumbing uses and stores. Moreover, in order to ensure that all lead plumbing is eliminated from commerce and to extend protection to rural residents, the lead ban should apply to all plumbing, not just to equipment connected to PWSs, Finally, this lead ban should be a mandatory component of all state drinking water programs, and should be enforceable by EPA, states, and citizens.

Conclusion

For centuries, lead has been recognized as an important health threat. Recent evidence shows that nationally, we must do more to reduce the levels of lead exposure of the public. We must take particular care of our children. We can initiate this process by adopting strict requirements that limit lead in drinking water and by banning lead in pipes and plumbing fixtures. The only way to ensure the safety of current and future generations of Americans is through a comprehensive control of all major sources of lead exposure, including lead paint, lead dust, airborne lead, lead in consumer and other products, and lead in drinking water.

Mr. **Waxman**. Thank you very much.

I want to thank all of your for your testimony. Lead poisoning is a frightening problem and it is clear that you're all very concerned about the issue and have some valuable suggestions to make.

Sometimes the principle of States as laboratories for public policy works well. In the case of lead poisoning there's been very little Federal leadership. As a result, States like Massachusetts have adopted many significant measures on their own to protect young children from lead.

I want to ask whichever of you who wish to respond to this what you think about these measures, whether they could serve as a model for national legislation.

Ms. Florini?

Ms. **Florini**. Mr. Chairman, yes, the Massachusetts model, Massachusetts act can serve as a model. There have been a number of experiences under that statute that indicate some ways in which the model can be refined as it is adopted on a more national basis, but again what must be stressed is without resources provided to especially abate low income housing we are not going to get very far in dealing with this problem at all so it is not only a question of having a set of model legislation, model regulations available, or even adopted at the Federal level, there's got to be a commitment to provide resources in addition.

Mr. **Waxman**. Well, let's take one piece of it. Massachusetts requires universal screening of young children for lead poisoning. Do you support this program?

Ms. **Florini**. Yes. At this point we think that is the best way to go forward. After additional data is gathered it may end up eventually being possible to define certain subgroups that might not need repeated screening at multiple stages during their life but certainly at this point what is needed is universal screening.

Mr. **Waxman**. Mr. Silbergeld, do you agree?

Mr. **Silbergeld**. We agree. We think that the data on the Massachusetts program when it—in the next couple of years should be useful in indicating as Ms. Florini indicates whether it should be repeated screening, whether it should be something that we follow children through with regardless of previous negative test results but as our testimony indicates, we support universal screening.

Mr. **Waxman**. Mr. Ringen?

Mr. **Ringen**. I can comment on universal screening, which I think is generally supported. Screening in itself isn't going to prevent any lead poisoning. What we have to do is to get the lead out of the houses.

In Massachusetts there are still serious problems with regard to adequate quality in the lead abatement work.

Mr. **Waxman**. Before we go too far afield, I just want to see, does anybody disagree with the idea that there ought to be screening of the kids?

Mr. **Gorman**. No disagreement.

Mr. **Waxman**. Okay, then, Massachusetts also requires disclosure of the risks of lead poisoning before homes are sold and, Mr. Gorman, the Carpenters Union advocates this right to know approach in your testimony.

Mr. **Gorman**. We think in fact it should go further, Chairman Waxman. We think that not only should there be a right to know but perhaps there ought to be some restrictions placed on the rights to transfer property with lead taken care of.

Now Massachusetts has such a program. They leave it to the buyer and the seller of the property to negotiate between them what is to be done with the lead in the homes but we think that is a good approach.

Mr. **Waxman**. Okay. Anybody disagree with the idea that at the minimum there ought to be the disclosure?

Massachusetts requires the mandatory licensing of contractors that perform lead abatements. Is this a good idea?

Mr. **Gorman**. Clearly. We have had plenty of experience with asbestos. Part of the problem that my colleague from the Laborers mentioned was the failure of many States to take on the task of licensing contractors who do this work, in addition to training workers through even stronger programs than are currently mandated in the State of Massachusetts should also be required, certifications for workers given as well as licensing for contractors.

Ms. **Florini**. Mr. Chairman, I think one additional point on that that should be made is by having a mandatory certification requirement I think you can most effectively convey the message that as the Consumers Product Safety Commission has stated, individual homeowners should not be doing abatements. They don't have enough experience or expertise or wherewithal to do it right. They are likely to be giving themselves and their children lead poisoning and quite possibly their neighbors as well.

The clearest way to get that message out is to make a Federal certification for lead abatement mandatory, I think.

Mr. **Waxman**. Mr. Olson, we heard testimony earlier today about EPA's new lead standards for drinking water. Can you comment on the legality and the wisdom of this EPA approach?

Mr. **Olson**. I'd be happy to. Under the Drinking Water Act, there is only one way that you are allowed to set a treatment technique as EPA has done in this case. You may only set a treatment technique if it is not possible to measure the contaminant in the drinking water. It is quite clear that you can measure lead in drinking water and therefore you are required under the statute to set a maximum contaminant level.

What is really sad about this is that it is totally unnecessary to set a treatment technique. It's quite feasible as EPA's own internal documents say to do the legal thing, which is to adopt a maximum contaminant level, so it is inexplicable to me why they have gone in this direction but we think it is quite clearly illegal.

The other interesting illegality about it is that as you mentioned earlier this morning, 10 percent of the system is not required to comply with the 15 part per billion level, so as much as 10 percent of many of these systems could exceed 15 parts per billion. There could be 50 or 100 parts per billion in the water and those people would be unprotected. That's clearly a violation of the Act, which says it has to cover all of the public water system, not just 90 percent of the customers.

Mr. **Waxman**. Mr. Wickser, how do you respond to that?

Mr. **Wickser**. Mr. Chairman, I can respond from the sense of the city of Los Angeles's system. We have no detectable lead in the source water and yet we did a sample testing of first draws with our customers and would only have a 60 percent compliance at the tap. This is all due to consumer problems, plumbing problems on site.

From a practical sense, separating it from the law, obviously the water purveyor has a responsibility of trying to deal with the corrosiveness of their water but a treatment process. This should help the consumer.

MCL in the system is acceptable to us. Our concern continues to be set an MCL on something that we can do nothing about, and that is the consumers' side of the system.

We think diagnostic testing so we know what the consumer problems are, given them education, give them advice, and provide the best quality water possible as a practical solution. I think there is no problem with an MCL within the distribution system which is something clearly within our purview to control.

Mr. **Waxman**. How about if you have lead pipes within your distribution system?

Mr. **Wickser**. They should be removed as soon as possible and we are removing those at the rate of about 1,500 a year and should have them all out of our system within 4 years.

Mr. **Waxman**. I was interested in your comment about Los Angeles. In Los Angeles, you have no detectable lead coming through the system but by the time it reaches the tap, you say it's only 60 percent of the compliance?

What does that mean, 60 percent, 40 percent of what?

Mr. **Wickser**. Sixty percent of our sample testing would have met an MCL of 10 and 40 percent would have had greater than a 10.

Mr. **Waxman**. What do you suggest we do about that?

Mr. **Wickser**. I think what we need to do——

Mr. **Waxman**. I mean in one sense it's not your problem. but whose problem is it and what do we do about it?

Mr. **Wickser**. No, please, sir. I think it is our problem. I think it's all of our problems.

Our concern is that if you set an MCL at the tap, the message you are sending to the consumer is it's not my job, don't worry about it, somebody's going to take care of it.

It's practically impossible for the purveyor to take care of what goes on on site even if we have licensed plumbers, quality plumbers. There's going to be some foulups, inadvertent situations where we have problems within the consumer's premises. By diagnostic testing, the utilities offering to test for the customer, identifying where there are lead problems—not everybody has lead problems—but where they are an educational system to help them, I think the water purveyor can take a major role in helping to get lead out of the consumer's system. We are certainly prepared to take that role.

Mr. **Waxman**. How much would it cost, in Los Angeles, if you had to assure that the MCL level was met at the tap?

Mr. **Wickser**. I have no way of estimating that because you are basically talking about replumbing somebody's house, and if we are talking about 400,000 single family residences in Los Angeles and say 40 percent of them had to be replumbed at $20,000 each, I do not know if that is a reasonable number, somebody would have to do the mathematics, but I am assuming we are talking about billions of dollars to do the physical plumbing.

Mr. **Waxman**. Mr. Olson, why don't I have you respond.

Mr. **Olson**. I think there is sort of a bogeyman here, which is that we are going to have to go out and pull out everybody's lead pipes in everybody's homes to solve this problem. A lot of the problem is going to be solved if we have an MCL measured at the tap, if the utility is made responsible for reducing corrosion—the corrosivity of their water, if they are made responsible for assuring that their water meets the standard, at the tap, by reducing how reducing the water is, that should take care of a lot of the problem, and by removing the lead pipes, if they have them in their distribution system.

Now, if the——

Mr. **Waxman**. Are you saying the consumer would be responsible or the purveyor?

Mr. **Olson**. The purveyor would be responsible for reducing the corrosivity of the water and for making sure that they do not have any lead pipes in the water purveyor's system. Now, if the purveyor of water can demonstrate that they have done everything they can to reduce corrosivity, that they have done everything they can to pull out all their lead pipes and that the problem persists, obviously, it is going to be something that the consumer is going to have to deal with. I think that that problem can be dealt with through the enforcement process and through the way that the MCL is defined. We have suggested a detailed way that you could do that, in our comments.

Mr. **Waxman**. Well, as I understand what Mr. Wickser is saying is that after they have done all they can do and there is still a problem, it is the problem of the pipes in the home, rather than within the control of the water system. Now, would we then say that it is up to the consumer, in the home, to replace the pipes and to spend the money for abatement of the lead problem?

Mr. **Olson**. Our suggestion in our comments was that if the utility has reduced all the corrosion in their water, and if they have taken all steps to pull the lead out of their entire system and there is still a problem, then it should be up to the utility to demonstrate that it is the homeowner's problem, that they are delivering water that is not corrosive to the consumer, and that they have also pulled the lead pipes. If they can show that the diagnostic test that shows that the—there is still excessive lead would then be delivered with some educational materials to the homeowner, to show that it is the homeowner's problem.

Mr. **Waxman**. Well, Mr. Wickser, what is wrong with that?

Mr. **Wickser**. I do not think we are very far apart, Mr. Chairman. I think——

Mr. **Waxman**. Well, we are soon to be very far apart, if we are going to go the direction that EPA is talking about going.

Mr. **Wickser**. Well, I think Mr. Olson was just talking about a treatment process, if I understood him correctly, which is what EPA is talking about.

Mr. **Waxman**. He is talking about an MCL level, but that you are only responsible to be sure that the water—that you have control over, and your system meets that MCL level; isn't that right, Mr. Olson?

Mr. **Olson**. Yes.

Mr. **Wickser**. By a treatment process——

Mr. **Waxman**. However you do it——

Mr. **Wickser**. Yes. But I mean——

Mr. **Waxman** [continuing]. You will have to accomplish that objective level though corrosion controls or replacing some of your pipes that may have lead, and public education beyond that. Then we would at least have that standard—that MCL standard, so the public would know that standard is there.

Mr. **Wickser**. The problem is the MCL standard, at the tap, continues to convey the impression to the public that big brother will take care of them. The reality is, after we have done everything Mr. Olson suggests, big brother can no longer take care of them, they must take care of themselves, and we are——

Mr. **Waxman**. Are you the big brother?

Mr. **Wickser**. Yes, we are big brother.

Mr. **Olson**. Big brother will never be responsible beyond that.

Mr. **Waxman**. Mr. Olson says that you, as big brother, will not have to be responsible, beyond that, even though it——

Mr. **Wickser**. We have already sent the message to them that we are going to take care of it, is our point. Because we are saying that an MCL at the tap, means that the Government, whatever level, is going to take care to make sure that water meets that MCL. Then what we are saying is, gee folks, we did everything possible, and we really cannot do it after all, now it is your turn.

Our position is we are going to do everything we can, but tell the people right up front that there is only so far we can go. Beyond that, you must do something. There is a lot of simple things. They can just merely take a first flush of their water and do something with it rather than consume it——

Mr. **Waxman**. Let me hear Mr. Olson's comments.

Mr. **Wickser** [continuing]. Be careful of the type of pots and pans you use.

Mr. **Waxman**. Do you agree with that limit on big brother, water distributor?

Mr. **Olson**. No, I cannot buy that. Basically, the reason that an MCL is so important is because the whole treatment technique approach that EPA has adopted is completely unenforceable, in our mind. You cannot go out the day after this thing is promulgated——

Mr. **Waxman**. Mr. Wickser is afraid that you are going to enforce it on him, and the public is going to think he is the one that is——

Mr. **Olson**. Well, maybe that is a justified concern. Basically, we are concerned that people not wait until 1999 or the year 2015 to have safe water. The way that EPA's rule is styled, that may very well be the case.

Mr. **Waxman**. He is saying that they should have safe water, but they should understand they are going to have to be responsible for safe water, which may well involve actions that they are going to have to take because there are only certain limits that the water purveyors are to be responsible for.

Mr. Silbergeld, do you want to add a comment?

Mr. SILBERGELD. Yes. I would like to look at a parallel system, which probably indicates what would happen down the line, if we went the way that the chairman and other—and witnesses are suggesting, instead of the way that EPA and the city of Los Angeles are suggesting. That is the implementation of—replacement of fuel inefficient furnaces with fuel efficient furnaces.

I live in the city of Baltimore, where we have a private gas—for profit-regulated gas and electric company. The gas and electric company promotes a system of replacing fuel inefficient with modern fuel efficient furnaces sold by them and financed by them and installed through a cooperating, licensed home improvement company. The homeowner who wants to do that, but cannot just go out and buy it privately, can get some financing for it. I think that there is a profit to the gas and electric company, and the job gets done.

My guess is that something like that would be done with plumbing, under a system where the city has to show that the noncompliance at the tap is not due to what the city has done. I am not saying—I am not suggesting that this be written into the statute, but I think that is the way the market is going to respond to a statute that is along the lines the chairman has suggested.

The city has to show that the level of noncompliance measured, first draw at the tap, is not due to anything that the city failed to do under the statute. I suspect that the market will then respond with those kinds of programs, to help the homeowner do what the homeowner needs to do, without getting the city in noncompliance because, as Mr. Olson suggests, the program they have recommended does have a way for a city to show that it is in compliance, despite some degree of noncompliance at the tap.

Mr. WICKSER. Mr. Chairman, I would like to clarify something I think we are missing. We, in the water industry, have no problem with the concept of an MCL in our distribution system. To me, if we set an MCL in the distribution system that is—at whatever the appropriate standard is, and if we have demonstrated a treatment process that is noncorrosive, it seems like we are addressing all the concerns, except what takes place on the customer's premises.

I am not sure if my statement was clear that we would support an MCL within the distribution system.

Mr. WAXMAN. You would support service line replacement?

Mr. WICKSER. Yes.

Mr. WAXMAN. Would you be willing to send a letter to OMB to that effect? I do not think they understand that.

Mr. WICKSER. I do not know if I can send it on behalf of everybody, but I certainly could on behalf of the city of Los Angeles.

Mr. WAXMAN. I would like to ask you to do that and see if you can get the others in the association to do it.

Well, it sounds to me like you are reasonably close to what we had proposed in our legislation a couple of years ago, and we ought to go back and take a look at it, and I would appreciate the comments of any of the witnesses that might want to offer some about how we try to accomplish that result.

Mr. Olson, did you want to say something?

Mr. Olson. Yes. I just wanted to emphasize that I think we need to stop creating the problem, also.

We need to stop allowing lead plumbing to continue to be installed, and I think the water utilities agree with that, that it is crazy to be continuing to install lead pipe and lead fixtures in hundreds of thousands or millions of homes when we know it is a problem.

So, I think an important element is to ban all lead plumbing and fixtures and materials.

Ms. Florini. Mr. Chairman, I think, on a related note, you encounter the same problem with retail sale of leaded solder. Although it has been banned for use in drinking water supply systems, the labels that are on those solder packages are small.

Once you take the solder out of its package, you have no way of distinguishing leaded solder from unleaded solder, and every day that that solder remains for retail sale, we are simply compounding the future problems that we are going to continue to have with lead in drinking water.

I cannot resist adding one final note. The Latin word for lead is "plumum," and the fact that the Romans used lead in their plumbing systems is where we derive the word "plumbing" from, and the scientific symbol for lead remains "Pb."

Mr. Waxman. Well, I think this has all been very helpful, and we look forward to working with all of you on this legislation. I thank you for your participation.

That completes the hearing, and we stand adjourned.

[Whereupon, at 3:22 p.m., the hearing was adjourned, to reconvene at the call of the Chair.]

LEAD POISONING

Lead Contamination Control Act Amendments of 1991

FRIDAY, JULY 26, 1991

House of Representatives,
Committee on Energy and Commerce,
Subcommittee on Health and the Environment,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9:50 a.m., in room 2123, Rayburn House Office Building, Hon. Henry A. Waxman (chairman) presiding.

Mr. WAXMAN. The meeting of the subcommittee will come to order. We welcome everybody today to the hearing on H.R. 2840, the Lead Contamination Control Act Amendments of 1991.

A silent epidemic—lead poisoning—is impairing the mental development of American children. The Federal Centers for Disease Control calls it "the most common and societally devastating environmental disease of young children."

The statistics are overwhelming: Nationwide, 3 million young children—one out of every six—have blood lead levels high enough to impair mental development. In some cities, half the young children have been exposed to enough lead to cause irreversible brain damage. In 1 out of every 10 pregnancies, the fetus risks abnormal development due to lead in the mother's blood.

Lead is widespread, it's extremely dangerous, and it's a poison. It can be found in our drinking water, on the walls and windows of our homes, and even in our food supply. Indeed, high levels of lead can be found throughout the Capitol, itself—even in this very building.

Two weeks ago, my staff and the staff of Congressman Gerry Sikorski, Senator Lautenberg, and the Congressional Research Service, tested the water at nearly 100 locations on Capitol Hill, including House and Senate office buildings and the Supreme Court.

We found disturbingly high levels of lead—in one case, over six times EPA's action level. Ten percent of the samples exceeded the contamination level at which EPA recommends that water fountains at schools should be immediately removed from service.

The results of this survey will be released today. They show that no one is safe from lead. Lead is in the home of the Vice President. It is behind the bench in the Supreme Court. It is in the water fountains in the halls of Congress. And it is in the home of the average American citizen.

It is this pervasive nature of lead that explains why 3 million American children are being poisoned by lead. Sadly, these children drop out of school seven times more often than their peers; they earn less; and they have lower IQ's.

Unfortunately, while the risks to our children are startlingly large, the Federal response is shockingly small. The U.S. Environmental Protection Agency devotes less than 1 percent of its budget to childhood lead poisoning. Moreover, the Agency has refused to testify today and has even failed to answer written inquiries about its regulation of lead in drinking water.

Even worse is a disastrous reversal of policy from the White House. Four months ago, the Centers for Disease Control released a comprehensive Strategic Plan for the administration to fight lead poisoning. The legislation being considered today is based closely on the recommendations in that plan. Yet, the Centers for Disease Control is now being forced to repudiate the key elements of that plan, which they drafted.

The legislation that we are considering today would rearrange Federal priorities by establishing a comprehensive program to end childhood lead poisoning. The legislation is based on a simple guiding principle—prevention. We cannot cure lead poisoning once it occurs. But we can protect our children by preventing them from being poisoned in the first place. That is the overriding intent of H.R. 2840.

H.R. 2840 contains new programs to prevent lead exposure from drinking water, lead paint, and food. It also requires testing of lead levels in schools and day care facilities. And it increases Federal spending on lead screening. Taken together, these measures add up to an effective prevention program—a prevention program that this Nation cannot afford to overlook any longer.

I look forward to the testimony today and to working on a bipartisan basis with the members of the subcommittee in addressing childhood lead poisoning. We are confronting an urgent problem that we must join together to address in this Congress.

Before calling on our witnesses, I want to recognize members of the subcommittee for opening statements, and call on Congressman Sikorski first.

Mr. Sikorski. Thank you, Mr. Chairman. Again I want to congratulate and commend you and your staff for doing such an excellent job in leading the way.

Lead poisoning was headline news again last night. The levels of lead that would be considered Superfund-Love Canal-Times Beach kind of hazardous waste is present in the backyards of homes in Minneapolis, in the backyards of homes all across America—and soil that children play in, and touch, and inhale, and ingest, and lick, and take in.

Primetime Live aired the story on the toxic levels of lead in urban soil that's poisoning America's children. Remnants of lead gasoline and exhausts that were spewed for decades along our streets and highways, thousands of millions of backyard Superfund sites may exist in America today.

You may remember the recent Newsweek cover story on the threat of peeling lead paint and dust present in the homes in which millions of America's children under 7 where those most vulnerable live.

This week we received test results from lead testing conducted by our staff showing dangerous levels of lead in the drinking water in this very building, my office, the chairman's office, and other congressional office buildings, as well as the Capitol and Supreme Court of the United States.

No one is immune to the toxic effects of lead, and all indications are that no one in America is safe from lead pollution.

So what's the President of the United States of America doing about alleviating the No. 1 environmental threat to kids in America? Not much, not enough, not anything—we could call our new world order priority.

Mark Twain often pointed out there's a big difference between lightning and thunder. Thunder makes noise but lightning gets the work done.

The Bush-Quayle administration obviously doesn't understand. They say, we care about getting lead out of our air—that's the thunder. But when EPA tried to ban the burning of lead batteries last December, and supported by every one of the six Agencies in the Federal Government, including the Office of Management and Budget, and the President's Council of Economic Advisers—not liberal Agencies, and pro business usually—they came up. Vice President Quayle's so-called Competitiveness Council said, no way.

The administration says, we care about getting the lead out of our drinking water—more thunder again. But the administration's lead action plan zaps the Federal Lead Standard down to zero and puts two more generations of America's kids at risk so big water utilities can have over two decades to try and get the lead out with unknown and unproven technologies.

And the administration says, we are about getting lead out of the drinking water at our kids' schools and day care centers. Thunder again. But the EPA's own Inspector General and the Natural Resources Defense Council both found that the administration has wholly failed to enforce the Lead Contamination Control Act of 1988 that we passed with the Reagan administration's support.

Sure the administration has a lead elimination plan for America's families. The problem is they limit it to one family and one home—the Vice President's. Pretty wimpy lightning.

Lead kills, lead retards, and it maims children. It stunts the intellectual development of millions of children in this country. It destroys families, it destroys futures. That's a competitiveness issue—a real one. The Lead Contamination Control Act Amendments of 1991 will serve as notice to every polluter and lead apologist—no more stale strategies or goofy technologies, or grand plans; it's time to start to protect our kids with some legislative lightning.

Thank you, Mr. Chairman.

Mr. WAXMAN. Thank you very much, Mr. Sikorski.

I understand several other members may be joining us soon. Let me ask unanimous consent at this point that all members of the subcommittee will have an opportunity to submit an opening statement that will be included in the record.

[Testimony resumes on p. 420.]

[The text of H.R. 2840 follows:]

I

102D CONGRESS
1ST SESSION

H. R. 2840

To amend the Public Health Service Act to reduce human exposure to lead in residences, schools for young children, and day care centers, including exposure to lead in drinking water, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JULY 10, 1991

Mr. WAXMAN (for himself, Mr. SIKORSKI, Mr. STOKES, Mr. SCHEUER, and Mr. CARDIN) introduced the following bill; which was referred to the Committee on Energy and Commerce

---

A BILL

To amend the Public Health Service Act to reduce human exposure to lead in residences, schools for young children, and day care centers, including exposure to lead in drinking water, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE AND TABLE OF CONTENTS.

This Act may be cited as the "Lead Contamination Control Act Amendments of 1991".

TABLE OF CONTENTS

Sec. 1. Short title and table of contents.
Sec. 2. Revision and extension of program for prevention of lead poisoning.
Sec. 3. Lead contamination in drinking water.
Sec. 4. Indoor lead contamination.
Sec. 5. Lead contamination in food.

SEC. 2. REVISION AND EXTENSION OF PROGRAM FOR PREVENTION OF LEAD POISONING.

(a) AUTHORITY FOR GRANTS.—

(1) IN GENERAL.—Section 317A(a) of the Public Health Service Act (42 U.S.C. 247b-1(a)) is amended to read as follows:

"(a) AUTHORITY FOR GRANTS.—

"(1) IN GENERAL.—The Secretary, acting through the Director of the Centers for Disease Control, may make grants to public and nonprofit private entities (including States and political subdivisions of States) for the initiation and expansion of community programs designed—

"(A) to provide, for infants and children—

"(i) screening for elevated blood-lead levels;

"(ii) treatment for such levels or referral for such treatment; and

"(iii) referral for environmental intervention associated with such levels; and

"(B) to provide education about childhood lead poisoning.

"(2) PROVISION OF ALL SERVICES AND ACTIVITIES THROUGH EACH GRANTEE.—In making grants under paragraph (1), the Secretary shall ensure that each of the services and activities described in such paragraph is provided through each grantee under such paragraph. The Secretary may authorize such a grantee to provide the services and activities directly, or through arrangements with other providers.".

(2) CONFORMING AMENDMENTS.—Section 317A of the Public Health Service Act (42 U.S.C. 247b-1) is amended—

(A) by redesignating subsections (b) through (j) as subsections (d) through (*l*), respectively;

(B) in subsection (h) (as so redesignated)—

(i) in paragraph (1), by striking the comma after "recipient" and inserting a semicolon; and

(ii) in paragraph (2), by striking the comma at the end and inserting a semicolon; and

(C) by inserting before subsection (d) (as so redesignated) the following:

"(c) PRIORITY IN MAKING GRANTS.—In making grants under subsection (a), the Secretary shall give priority to applications for programs that will serve areas with a high incidence of elevated blood-lead levels in infants and children.".

(b) ESTABLISHMENT OF REQUIREMENT REGARDING STATUS AS MEDICAID PROVIDER.—Section 317A of the Public Health Service Act, as amended by subsection (a)(2)(A), is amended by inserting after subsection (a) the following new subsection:

"(b) STATUS AS MEDICAID PROVIDER.—

"(1) IN GENERAL.—Subject to paragraph (2), the Secretary may not make a grant under subsection (a) unless, in the case of any service described in such subsection that is made available pursuant to the State plan approved under title XIX of the Social Security Act for the State involved—

"(A) the applicant for the grant will provide the service directly, and the applicant has entered into a participation agreement under the State plan and is qualified to receive payments under such plan; or

"(B) the applicant will enter into an agreement with a provider under which the provider will provide the service, and the provider has entered into such a participation agreement and is qualified to receive such payments.

"(2) WAIVER REGARDING CERTAIN SECONDARY AGREEMENTS.—

"(A) In the case of a provider making an agreement pursuant to paragraph (1)(B) regarding the provision of services, the requirement established in such paragraph regarding a participation agreement shall be waived by the Secretary if the provider does not, in providing health care services, impose a charge or accept reimbursement available from any third-party payor, including reimbursement under any insurance policy or under any Federal or State health benefits plan.

"(B) A determination by the Secretary of whether a provider referred to in subparagraph (A) meets the criteria for a waiver under such subparagraph shall be made without regard to whether the provider accepts voluntary donations regarding the provision of services to the public.".

(c) GRANT APPLICATION.—

(1) COORDINATION.—Section 317A of the Public Health Service Act, as amended by subsection (a)(2)(A), is amended—

(A) by striking subsection (f); and

(B) in subsection (d)(1)—

(i) by redesignating subparagraph (E) as subparagraph (F); and

(ii) by inserting after subparagraph (D) the following new subparagraph:

"(E) Assurances satisfactory to the Secretary that there will be coordination between the services and activities of the applicant carried out pursuant to subsection (a) and any related services and activities carried out in the State by grantees under title V or XIX of the Social Security Act.".

(2) REPORT.—Section 317A(d)(2) of the Public Health Service Act, as redesignated by subsection (a)(2)(A), is amended to read as follows:

"(2) ANNUAL REPORT.—Not later than February 1 of each year, the Secretary shall submit to Congress, a report on the effectiveness during the preceding fiscal year of programs carried out with grants under subsection (a) and of any programs that are carried out by the Secretary pursuant to subsection (*l*)(2).".

(3) TECHNICAL AND CONFORMING AMENDMENTS.—Section 317A(d)(1) of the Public Health Service Act, as redesignated by subsection (a)(2)(A)

and amended by subsection (c)(1)(B)(i), is amended—

(A) by striking "(d) GRANT" and all that follows through "No grant" and inserting the following:

"(d) GRANT APPLICATION.—

"(1) IN GENERAL.—No grant";

(B) by moving each of subparagraphs (A) through (F) 2 ems to the right; and

(C) in subparagraph (C), by striking "effectiveness" and all that follows and inserting "effectiveness.".

(d) ESTABLISHMENT OF PROVISION REGARDING RELATIONSHIP TO ITEMS AND SERVICES UNDER OTHER PROGRAMS.—Section 317A of the Public Health Service Act, as amended by subsection (c)(1)(A), is amended by inserting after subsection (e) the following new subsection:

"(f) RELATIONSHIP TO SERVICES AND ACTIVITIES UNDER OTHER PROGRAMS.—

"(1) IN GENERAL.—A recipient of a grant under subsection (a) may not make payments from the grant for any service or activity to the extent that payment has been made, or can reasonably be expected to be made, with respect to such service or activity—

"(A) under any State compensation program, under an insurance policy, or under any Federal or State health benefits program; or

"(B) by an entity that provides health services on a prepaid basis.

"(2) APPLICABILITY TO CERTAIN SECONDARY AGREEMENTS FOR PROVISION OF SERVICES.—Paragraph (1) shall not apply in the case of a provider through which a grantee under subsection (a) provides services under such subsection if the Secretary has provided a waiver under subsection (b)(2) regarding the provider.".

(e) AUTHORIZATION OF APPROPRIATIONS.—

(1) IN GENERAL.—Section 317A(*l*) of the Public Health Service Act, as redesignated by subsection (a)(2)(A), is amended—

(A) by striking "There are" and all that follows through "not more than" and inserting the following: "For the purpose of carrying out this section, there are authorized to be appropriated";

(B) by striking "and" after "1990,"; and

(C) by inserting before the period the following: ", $40,000,000 for fiscal year 1992, and such sums as may be necessary for each of the fiscal years 1993 through 1996”.

(2) Establishment of set-aside.—Section 317A(*l*) of the Public Health Service Act, as amended by paragraph (1), is amended—

(A) by striking “(*l*) Authorization” and all that follows through “purpose” and inserting the following:

“(*l*) Funding.—

“(1) Authorization of appropriations.—For the purpose”; and

(B) by adding at the end the following new paragraph:

“(2) Set-aside for other programs.—Of the amounts appropriated under paragraph (1) for any fiscal year, the Secretary may reserve not more than 20 percent for carrying out programs regarding the services and activities described in subsection (a) in addition to the program of grants established in such subsection.”.

(f) Effective Date.—The amendments made by this section shall take effect October 1, 1991, or upon the date of the enactment of this Act, whichever occurs later.

SEC. 3. LEAD CONTAMINATION IN DRINKING WATER.

(a) National Public Drinking Water Regulations for Lead.—Title XIV of the Public Health Service Act (Safe Drinking Water Act; 42 U.S.C. 300f and following) is amended by inserting "Subpart 1—In General" immediately before the section heading for section 1411 and by adding the following at the end thereof:

"Subpart 2—Special Provisions Relating to National Primary Drinking Water Regulations for Lead

"Subpart 2—Special Provisions Relating to National Primary Drinking Water Regulations for Lead

"Sec. 1418. Definitions.
"Sec. 1418A. General requirements.
"Sec. 1418B. Applicability of corrosion control treatment steps to small, medium-size and large water systems.
"Sec. 1418C. Description of corrosion control treatment requirements.
"Sec. 1418D. Source water maximum contaminant level.
"Sec. 1418E. Lead service line replacement requirements.
"Sec. 1418F. Public education and supplemental monitoring requirements.
"Sec. 1418G. Monitoring requirements for lead in tap water.
"Sec. 1418H. Monitoring requirements for water quality parameters.
"Sec. 1418I. Monitoring requirements for lead in source water.
"Sec. 1418J. Analytical methods.
"Sec. 1418K. Reporting requirements.
"Sec. 1418L. Recordkeeping requirements.
"Sec. 1418M. Implementation requirements.
"Sec. 1418N. EPA review of implementation of NPDWR for lead.
"Sec. 1418O. Variances and exemptions.".

"SEC. 1418. DEFINITIONS.

"For purposes of this subpart—

"(1) The term 'corrosion inhibitor' means a substance capable of reducing the corrosivity of water toward metal plumbing materials, especially lead, by forming a protective film on the interior surface of those materials.

"(2) The term 'effective corrosion inhibitor residual' means a concentration sufficient to form a passivating film on the interior walls of a pipe.

"(3) The term 'first draw sample' means a one-liter sample of tap water, collected in accordance with section 1418G(b)(2), that has been standing in plumbing pipes at least 6 hours and is collected without flushing the tap.

"(4) The term 'large water system' means a water system that serves more than 50,000 persons.

"(5) The term 'lead service line' means a service line made of lead which connects the water main to the building inlet and any lead pigtail, gooseneck, or other fitting which is connected to such lead line.

"(6) The term 'medium-size water system' means a water system that serves greater than 3,300 and less than or equal to 50,000 persons.

"(7) The term 'optimal corrosion control treatment' means the corrosion control treatment that minimizes the lead concentrations at users' taps while insuring that the treatment does not cause (A) the water system to violate any national primary drinking water regulations or (B) significant adverse impacts on the environment, including treatment works and the water receiving the effluent of treatment works.

"(8) The term 'service line sample means a one-liter sample of water, collected in accordance with section 1418G(b)(3) that has been standing for at least 6 hours in a service line.

"(9) The term 'single family structure' means a building constructed as a single-family residence that is currently used as either a residence or a place of business.

"(10) The term 'small water system' means a water system that serves 3,300 persons or fewer.

"SEC. 1418A. GENERAL REQUIREMENTS.

"(a) APPLICABILITY AND EFFECTIVE DATES.—(1) The requirements set forth in this subpart constitute the national primary drinking water regulation for lead for purposes of this part. Unless otherwise indicated, each of the provisions of this subpart applies to community water systems and noncommunity water systems (hereinafter in this subpart referred to as 'water systems' or 'systems').

"(2) Except as otherwise expressly provided in this subpart, the requirements set forth in this subpart shall take effect 30 days after the enactment of this subpart.

"(b) LEAD CONTAMINATION LIMIT FOR TAP WATER.—The Congress hereby establishes a limit for lead in tap water (hereinafter in this subpart referred to as the 'tap water lead limit'). The tap water lead limit is exceeded if the concentration of lead in any tap water sample collected during any monitoring conducted in accordance with section 1418G is greater than 10 parts per billion (ppb).

"(c) MAXIMUM CONTAMINANT LEVEL GOAL.—The maximum contaminant level goal (in mg/L) for lead in drinking water is zero.

"(d) VIOLATION OF NATIONAL PRIMARY DRINKING WATER REGULATIONS.—Failure to comply with the applicable requirements of this subpart, including requirements established by the State pursuant to this subpart, shall constitute a violation of the national primary drinking water regulations for lead.

"(e) RELATIONSHIP TO PRIOR REGULATIONS.—

"(1) EPA LEAD REGULATIONS REPLACED.—The requirements set forth in this subpart shall apply in lieu of the requirements with regard to lead in drinking water contained in regulations of the Administrator promulgated on May 6, 1991, except as otherwise provided in the first sentence of section 1418J (relating to analytical methods). After the enactment of this section, the Administrator may promulgate, under this subpart and under subpart 1, regulations with regard to lead in drinking water but only to the extent that such regulations are more protective of human health than any corresponding requirements of this subpart.

"(2) PRIOR MCL FOR LEAD.—The maximum contaminant level for lead in effect for lead before May 6, 1991, shall be in effect immediately upon enactment of this subpart.

"SEC. 1418B. APPLICABILITY OF CORROSION CONTROL TREATMENT STEPS TO SMALL, MEDIUM-SIZE AND LARGE WATER SYSTEMS.

"(a) COMPLETION OF CORROSION CONTROL TREATMENT.—Systems shall complete the applicable corrosion control treatment requirements described in section 1418C by the deadlines established in this section.

"(1) A large system (serving greater than 50,000 persons) shall complete the corrosion control treatment steps specified in subsection (d) of this section, unless it is deemed to have optimized corrosion control under paragraphs (2) or (3) of subsection (b).

"(2) A small system (serving greater than or equal to 3,300 persons) and a medium-sized system (serving greater than 3,300 persons and less than or equal to 50,000 persons) shall complete the corrosion control treatment steps specified in subsection (e) of this section, unless it is deemed to have optimized corrosion control under paragraphs (1), (2) or (3) of subsection (b)

"(b) SYSTEMS DEEMED TO HAVE OPTIMIZED CORROSION CONTROL.—A system is deemed to have optimized corrosion control and is not required to complete the applicable corrosion control treatment steps identified in this section if the system satisfies 1 of the following criteria:

"(1) A small or medium-sized water system is deemed to have optimized corrosion control if the system meets the tap water lead limit lead during each of 2 consecutive 6-month monitoring periods conducted in accordance with section 1418G.

"(2) Any water system may be deemed by the State, after notice and opportunity for comment, to have optimized corrosion control treatment if the system demonstrates to the satisfaction of the State that it has conducted activities equivalent to the corrosion control steps applicable to such system under this section. If the State makes this determination, it shall provide the system with written notice explaining the basis for its decision and shall specify the water quality control parameters representing optimal corrosion control in accordance with section

1418C. A system shall provide the State with the following information in order to support a determination under this paragraph—

"(A) the results of all test samples collected for each of the water quality parameters in section 1418C(c)(3);

"(B) a report explaining the test methods used by the water system to evaluate the corrosion control treatments listed in section 1418C(c)(1), the results of all tests conducted, and the basis for the system's selection of optimal corrosion control treatment;

"(C) a report explaining how corrosion control has been installed and how it is being maintained to insure minimal lead and copper concentrations at consumers' taps; and

"(D) the results of tap water samples collected in accordance with section 1418G at least once every 6 months for 1 year after corrosion control has been installed.

"(3) Any water system is deemed to have optimized corrosion control if it submits results of tap water monitoring conducted in accordance with section 1418G and source water monitoring conducted in accordance with section 1418I that demonstrates for 2 consecutive 6-month monitoring periods that the difference between the highest tap water lead concentration and the highest source water lead concentration is not detectable.

"(c) CESSATION OF CORROSION CONTROL.—Any small or medium-sized water system that is required to complete the corrosion control steps due to its exceedance of the tap water lead limit may cease completing the treatment steps whenever the system meets such tap water lead limit during each of 2 consecutive monitoring periods conducted pursuant to section 1418G and submits the results to the State. If any such water system thereafter exceeds the tap water lead limit during any monitoring period, the system (or the State, as the case may be) shall recommence completion of the applicable treatment steps, beginning with the first treatment step which was not previously completed in its entirety. The State may require a system to repeat treatment steps previously completed by the system where the State determines that this is necessary to implement properly the treatment requirements of this section. The State shall notify the system in writing of such a determination and explain the basis for its decision.

"(d) TREATMENT STEPS AND DEADLINES FOR LARGE SYSTEMS.—Except as provided in paragraph (2) and (3) of subsection (b) of this section, large systems shall complete the following corrosion control treatment steps by the indicated dates.

"(1) STEP 1: The system shall conduct initial monitoring (sections 1418G(d)(1) and 1418H(b)) within 6 months after enactment of this subpart.

"(2) STEP 2: The system shall complete corrosion control studies (section 1418C(c)) within 12 months after enactment of this subpart.

"(3) STEP 3: The State shall designate optimal corrosion control treatment (section 1418C(d)) within 18 months after enactment of this subpart.

"(4) STEP 4: The system shall install optimal corrosion control treatment (section 1418C(e)) within 24 months after enactment of this subpart.

"(5) STEP 5: The system shall complete follow-up sampling (section 1418H(c)) within 30 months after enactment of this subpart.

"(6) STEP 6: The State shall review installation of treatment and designate optimal water quality control parameters (section 1418C(f)) within 36 months after enactment of this subpart.

"(7) STEP 7: The system shall operate in compliance with the State specified optimal water quality control parameters (section 1418C(g)) and continue to conduct tap sampling (section 1418H(d)).

"(e) TREATMENT STEPS AND DEADLINES FOR SMALL AND MEDIUM-SIZE SYSTEMS.—Except as provided in subsection (b) of this section, small and medium-size systems shall complete the following corrosion control treatment steps (described in the referenced portions of sections 1418C, 1418G, and 1418H) by the indicated time periods.

"(1) STEP 1: The system shall conduct initial tap sampling (section 1418G(d)(1)) within 6 months after enactment of this subpart. A system exceeding the tap water lead limit shall recommend optimal corrosion control treatment (section 1418C(a)) within 6 months after it exceeds the tap water lead limit.

"(2) STEP 2: Within 12 months after a system exceeds tap water lead limit the State may require the system to perform corrosion control studies (section 1418C(b)). If the State does not require the system to perform such studies, the State shall specify optimal corrosion control treatment (section 1418C(d)) within 12 months after such system exceeds the tap water lead limit.

"(3) STEP 3: If the State requires a system to perform corrosion control studies under step 2, the system shall complete the studies (section 1418C(c)) within 12 months after the State requires that such studies be conducted.

"(4) STEP 4: If the system has performed corrosion control studies under step 2, the State shall designate optimal corrosion control treatment (section 1418C(d)) within 6 months after completion of step 3.

"(5) STEP 5: The system shall install optimal corrosion control treatment (section 1418C(e)) within 12 months after the State designates such treatment.

"(6) STEP 6: The system shall complete follow-up sampling (section 1418H(c)) within *24* months after the State designates optimal corrosion control treatment.

"(7) STEP 7: The State shall review the system's installation of treatment and designate optimal water quality control parameters (section 1418C(f)) within 6 months after completion of step 6.

"(8) STEP 8: The system shall operate in compliance with the State designated optimal water quality control parameters (section 1418C(g)) and continue to conduct tap sampling (section 1418H(d)).

"SEC. 1418C. DESCRIPTION OF CORROSION CONTROL TREATMENT REQUIREMENTS.

"Each system shall complete the corrosion control treatment requirements described below which are applicable to such system under section 1418B.

"(a) SYSTEM RECOMMENDATION REGARDING CORROSION CONTROL TREATMENT.—Based upon the results of lead tap monitoring and water quality parameter monitoring, small and medium-size water systems exceeding the tap water lead limit shall recommend installation of 1 or more of the corrosion control treatments listed in subsection (c)(1) of this section which the system believes constitutes optimal corrosion control for that system. The State may require the system to conduct additional water quality parameter monitoring in accordance with section 1418H(b) to assist the State in reviewing the system's recommendation.

"(b) STATE DECISION TO REQUIRE STUDIES OF CORROSION CONTROL TREATMENT (APPLICABLE TO SMALL AND MEDIUM-SIZE SYSTEMS).—The State may require any small or medium-size system that exceeds the tap water lead limit to perform corrosion control studies under subsection (c) of this section to identify optimal corrosion control treatment for the system.

"(c) PERFORMANCE OF CORROSION CONTROL STUDIES.—

"(1) Any public water system performing corrosion control studies shall evaluate the effectiveness of each of the following treatments, and, if appropriate, combinations of the following treatments to identify the optimal corrosion control treatment for that system—

"(A) alkalinity and pH adjustment;

"(B) calcium hardness adjustment; and

"(C) the addition of a phosphate or silicate based corrosion inhibitor at a concentration sufficient to maintain an effective residual concentration in all test tap samples.

"(2) The water system shall evaluate each of the corrosion control treatments using either pipe rig/loop tests, metal coupon tests, partial-system tests, or analyses based on documented analogous treatments with other systems of similar size, water chemistry, and distribution system configuration.

"(3) The water system shall measure the following water quality parameters in any tests conducted under this paragraph before and after evaluating the corrosion control treatments listed above—

"(A) lead;

"(B) copper;

"(C) pH;

"(D) alkalinity;

"(E) calcium;

"(F) conductivity;

"(G) orthophosphate (when an inhibitor containing a phosphate compound is used);

"(H) silicate (when an inhibitor containing a silicate compound is used); and

"(I) water temperature.

"(4) The water system shall identify all chemical or physical constraints that limit or prohibit the use of a particular corrosion control treatment and document such constraints with at least 1 of the following:

"(A) data and documentation showing that a particular corrosion control treatment has adversely affected other water treatment processes when used by another water system with comparable water quality characteristics; and/or

"(B) data and documentation demonstrating that the water system has previously attempted to evaluate a particular corrosion control treatment and has found that the treatment is ineffective or adversely affects other water quality treatment processes.

"(5) The water system shall evaluate the effect of the chemicals used for corrosion control treatment on other water quality treatment processes.

"(6) On the basis of an analysis of the data generated during each evaluation, the water system shall recommend to the State in writing the treatment option that the corrosion control studies indicate constitutes optimal corrosion control treatment for that system. The water system shall provide a rationale for its recommendation along with all supporting documentation specified in subsections (c)(1) through (5) of this section.

"(d) STATE DESIGNATION OF OPTIMAL CORROSION CONTROL TREATMENT.—(1) Based upon consideration of available information including, where applicable, studies performed under subsection (c) of this section and a system's recommended treatment alternative, the State shall, after notice and opportunity for comment, either approve the corrosion control treatment option recommended by the system, or designate alternative corrosion control treatment(s) from among those listed in subsection (c)(1) of this section. When designating optimal treatment the State shall consider the effects that additional corrosion control treatment will have on water quality parameters and on other water quality treatment processes.

"(2) The State shall notify the system of its decision on optimal corrosion control treatment in writing and explain the basis for this determination. If the State requests additional information to aid its review, the water system shall provide the information.

"(e) Installation of Optimal Corrosion Control.—Each system shall properly install and operate throughout its distribution system the optimal corrosion control treatment designated by the State under subsection (d) of this section.

"(f) State Review of Treatment and Specification of Optimal Water Quality Control Parameters.—The State shall evaluate the results of all lead tap samples and water quality parameter samples submitted by the water system and determine whether the system has properly installed and operated the optimal corrosion control treatment designated by the State in subsection (d) of this section. Upon reviewing the results of tap water and water quality parameter monitoring by the system, both before and after the system installs optimal corrosion control treatment, the State shall, after notice and opportunity for comment, designate—

"(1) a minimum value or a range of values for pH measured at each entry point to the distribution system;

"(2) a minimum pH value, measured in all tap samples. Such value shall be equal to or greater than 7.0, unless the State determines that meeting a pH level of 7.0 is not technologically feasible or is not necessary for the system to optimize corrosion control;

"(3) if a corrosion inhibitor is used, a minimum concentration or a range of concentrations for the inhibitor, measured at each entry point to the distribution system and in all tap samples, that the State determines is necessary to form a passivating film on the interior walls of the pipes of the distribution system;

"(4) if alkalinity is adjusted as part of optimal corrosion control treatment, a minimum concentration or a range of concentrations for alkalinity, measured at each entry point to the distribution system and in all tap samples;

"(5) if calcium carbonate stabilization is used as part of corrosion control, a minimum concentration or a range of concentrations for calcium, measured in all tap samples.

The values for the applicable water quality control parameters listed above shall be those that the State determines to reflect optimal corrosion control treatment for the system. The State may designate values for additional water quality control parameters determined by the State to reflect optimal corrosion control for the system. The State shall notify the system in writing of these determinations and explain the basis for its decisions.

"(g) CONTINUED OPERATION AND MONITORING.—All systems shall maintain water quality parameter values at or above minimum values or within ranges designated by the State under subsection (f) of this section in each sample collected under section 1418H(d). If the water quality parameter value of any sample is below the minimum value or outside the range designated by the State, then the system is out of compliance with this subsection. As specified in section 1418H(d), the system may take a confirmation sample for any water quality parameter value no later than 3 days after the first sample. If a confirmation sample is taken, the result must be averaged with the first sampling result and the average must be used for any compliance determinations under this subsection. States have discretion to delete results of obvious sampling errors from this calculation.

"(h) MODIFICATION OF STATE TREATMENT DECISIONS.—Upon its own initiative or in response to a request by a water system or other interested party, a State may, after notice and opportunity for comment, modify its determination of the optimal corrosion control treatment under subsection (d) of this section or optimal water quality control parameters under subsection (f) of this section. A request for modification by a system or other interested party shall be in writing, explain why the modification is appropriate, and provide supporting documentation. The State may modify its determination where it concludes that such change is necessary to ensure that the system continues to optimize corrosion control treatment. A revised determination shall be made in writing, set forth the new treatment requirements, explain the basis for the State's decision, and provide an implementation schedule for completing the treatment modifications.

" (i) EPA REGULATIONS OR GUIDELINES.—Within 6 months after the enactment of this subpart the Administrator shall issue regulations or guidelines to facilitate compliance with the requirements of this section.

"SEC. 1418D. SOURCE WATER MCL.

"The Congress hereby establishes, by operation of law, to be effective 18 months after the enactment of this subpart, a maximum contaminant level (MCL) for lead in source water which shall be considered exceeded whenever the concentration of lead in source water is greater than 5 parts per billion (ppb).

"SEC. 1418E. LEAD SERVICE LINE REPLACEMENT REQUIREMENTS.

"(a) BASIC REQUIREMENT.—Public water systems that fail to meet the tap water lead limit in samples taken pursuant to section 1418G(d) after installing corrosion control shall replace lead service lines in accordance with the requirements of this section.

"(b) REPLACEMENT SCHEDULE.—

"(1) IN GENERAL.—A system shall replace lead services lines in its distribution system at an annual rate which will replace each year either 20 percent of the lead service lines or 10 percent of the total service lines, whichever results in replacement of a greater number of lead service lines. The initial number of lead service lines is the number of lead lines in place at the time the replacement program begins. The system shall identify the initial number of lead and nonlead service lines in its distribution system based upon a materials evaluation, including the evaluation required under section 1418G(a). The first year of lead service line replacement shall begin on the date the tap water lead limit was exceeded in tap water sampling referenced in subsection (a) of this section. If the State fails to designate optimal corrosion control by the date required under section 1418B or if a system fails to install corrosion control treatment by the date required under section 1418B, the first year of lead service line replacement shall begin 6 months after the such date.

"(2) EXTENSION OF SCHEDULE FOR CERTAIN SYSTEMS.—Upon the application of a public water system with an especially large number of lead service lines in its distribution system, the State may, after notice and opportunity for comment, extend the schedule for lead service line replacement established under paragraph (1). Such extension shall provide for the replacement by the system of all lead service lines in its distribution system at the earliest feasible date. Such extension shall provide for replacement of an equal percentage of such lines in each year during the extension and shall terminate no later than the date specified in the following table:

Total number of lead service lines to be replaced by System	Maximum extension period
More than 50,000	3 years
More than 100,000	5 years
More than 300,000	10 years
More than 450,000	13 years

"(c) SERVICE LINES NOT CONTRIBUTING TO VIOLATION.—A system is not required to replace an individual lead service line if the State determines, after notice and opportunity for comment, that the service line does not contribute to tap water lead concentrations in excess of

10 parts per billion (ppb). In such a case, the service line shall be treated by the system as a nonlead line.

"(d) PORTION OF SERVICE LINE REPLACED.—A water system shall replace the entire service line (up to the building inlet) unless it demonstrates to the satisfaction of the State under subsection (e) of this section that it controls less than the entire service line. In such cases, the system shall replace the portion of the line which the State determines is under the system's control. The system shall notify the user served by the line that the system will replace the portion of the service line under its control and shall offer to replace the building owner's portion of the line, but is not required to bear the cost of replacing the building owner's portion of the line. For buildings where only a portion of the lead service line is replaced, the water system shall inform each resident that the system will collect a first flush tap water sample after partial replacement of the service line is completed if the resident so desires. In cases where the resident accepts the offer, the system shall collect the sample and report the results to the resident within 14 days following partial lead service replacement.

"(e) CONTROL.—A water system is presumed to control the entire lead service line (up to the building inlet) unless the the State determines, after notice and opportunity for comment, that it does not have any of the following forms of control over the entire line (as defined by State statutes, municipal ordinances, public service contracts or other applicable legal authority): authority to set standards for construction, repair, or maintenance of the line, authority to replace, repair, or maintain the service line, or ownership of the service line. The State shall review the information supplied by the system and determine whether the system controls less than the entire service line and, in such cases, shall determine the extent of the system's control. The State's determination shall be in writing and explain the basis for its decision.

"(f) SHORTER SCHEDULE.—The State shall require a system to replace lead service lines on a shorter schedule than that required by this section, taking into account the number of lead service lines in the system, where such a shorter replacement schedule is feasible. The State shall, after notice and opportunity for comment, make this determination in writing and notify the system of its finding within 6 months after the system is triggered into lead service line replacement based on monitoring referenced in subsection (a) of this section.

"(g) CESSATION OF SERVICE LINE REPLACEMENT.—Any system may cease replacing lead service lines whenever the tap water samples collected pursuant to section 1418G(d)(1) meet the tap water lead limit during each of 2 consecutive monitoring periods and the system submits the results to the State. If the tap water samples in any such water system thereafter exceed the tap water lead limit, the system shall recommence replacing lead service lines within 6 months of such exceedance.

"(h) REPORTING BY SYSTEM.—To demonstrate compliance with subsections (a) through (d) of this section, a system shall report to the State the information specified in section 1418K(e).

"(i) VOLUNTARY LEAD PIPE REMOVAL.—Each State shall, within 18 months of the date of enactment of this subpart, establish a program to encourage all public water systems in the State to provide a voluntary service of referring building owners in the system's service area to approved contractors to remove lead plumbing, fixtures, or solder from their buildings. Such programs shall also encourage public water systems to offer to fund such removal and to bill their water customers on their water bills, amortized over a significant period of time, to allow easy payment for such removal. The Administrator shall, within 6 months of the date of enactment of this Act, develop and distribute to each State and the public a model State program designed to achieve these goals.

"SEC. 1418F. PUBLIC EDUCATION AND SUPPLEMENTAL MONITORING REQUIREMENTS.

"A water system that exceeds the tap water lead limit shall deliver the public education materials contained in subsections (a) and (b) of this section in accordance with the requirements in subsection (c) of this section.

"(a) CONTENT OF WRITTEN MATERIALS.—A water system shall include the following text in all of the printed materials it distributes through its lead public education program. Any additional information presented by a system shall be consistent with the information below and be in plain English that can be understood by laypersons:

"INTRODUCTION

"The drinking water supplied by [insert name of water supplier] has been tested at several locations in your community and found to be contaminated with the toxic chemical lead. Some homes in the community have lead levels above the Federal tap water lead limit of 10 parts per billion (ppb), or 0.010 milligrams of lead per liter of water (mg/L). Other homes may have lead levels above the maximum contaminant level goal for lead established by the United States Environmental Protection Agency, which is no lead in drinking water.

Under Federal law we are required to have a program in place to minimize lead in your drinking water. This program includes corrosion control treatment (to decrease the level of lead drawn into water from lead in distribution pipes and from lead in home plumbing) and public education. We are also required to replace each lead service line that we control if the line contributes to lead concentrations of 10 parts per billion or more after we have completed the corrosion control treatment program. If you have any questions about how we are carrying out the requirements of Federal law please give us a call at [insert water system's phone number].

Although our lead control program will reduce lead in drinking water, because of contamination from home plumbing, it may not succeed in completely eliminating lead from drinking water or even in lowering lead contamination to the tap water lead limit. This brochure explains the simple additional steps you can take to protect you and your family by reducing your exposure to lead in drinking water.

"HEALTH EFFECTS OF LEAD

"Lead is an extremely dangerous and pervasive poison found in lead-based paint, air, soil, household dust, food, certain types of pottery, porcelain, pewter, and water. Lead can pose a significant risk to your health and especially to the health of your children.

Lead builds up in the body over many years and can cause damage to the brain, red blood cells, and kidneys. Lead probably causes cancer in humans. Lead appears to cause elevated blood pressure in adult men.

The greatest risk is to young children and pregnant women. Small amounts of lead can impair normal mental and physical development of young children and fetuses. This damage can reduce intelligence and cause behavioral disturbances. These effects appear to be irreversible.

There is no known safe level of lead exposure.

"LEAD IN DRINKING WATER

"Lead in drinking water can significantly increase a person's total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water. The EPA estimates that, on average, drinking water makes up about 20 percent of a person's total exposure to lead. In some cases the percentage can be much higher. Infants who drink baby formulas made from lead contaminated tap water have in some instances suffered acute lead poisoning.

"Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass, and chrome plated brass faucets, and in some cases, pipes made of lead that connect your house to the water main (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2 percent lead, and restricted the lead content of faucets, pipes and other plumbing materials to 8.0 percent. In 1991 Congress further tightened controls on lead content in faucets, pipes and other plumbing materials.

"When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon after returning from work or school, can contain fairly high levels of lead.

"Federal law has set a tap water lead limit which is being exceed in homes in your community. As a result of this exceedance, we are undertaking a program of corrosion control, public education, and [if necessary] lead service line replacement as required by Federal law to reduce lead levels in tap water. Installation of corrosion control [is required to occur/occurred] by [insert date]. Replacement of lead service lines [if necessary] [is required to occur/occurred] by [insert date]. Despite these measures lead levels [may] still exceed the tap water lead limit in homes in your community due to lead contamination in home plumbing.

"STEPS YOU CAN TAKE IN THE HOME TO REDUCE EXPOSURE TO LEAD IN DRINKING WATER

"To find out whether you need to take action in your own home, have your drinking water tested to determine if it contains excessive concentrations of lead. Testing the water is essential because you cannot see, taste, or smell lead in drinking water. Some local laboratories that can provide this service are listed at the end of this booklet. For more information on having your water tested, please call [insert phone number of water system].

"If a water test indicates that the drinking water drawn from a tap in your home contains lead above 10 ppb, then you should take the following precautions. The EPA has set a goal of zero for lead contamination in drinking water so you should consider taking these steps even if the lead concentration in your drinking water is below 10 ppb.

"(1) Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than 6 hours. The longer water resides in your home's plumbing the more lead it may contain. Flushing the tap means running the cold water faucet until the water gets noticeably colder, usually about 15–30 seconds. If your house has a lead service line to the water main, you may have to flush the water for a longer time, perhaps one minute, before drinking. Although toilet flushing or showering flushes water through a portion of your home's plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your family's health. It usually uses less than 1 or 2 gallons of water and costs less than [insert a cost estimate based on flushing 2 times a day for 30 days] per month. To conserve water, fill a couple of bottles for drinking water after flushing the tap, and whenever possible use the first flush water to wash the dishes or water the plants.

If you live in a high-rise building, letting the water flow before using it may not work to lessen your risk from lead. The plumbing systems have more, and sometimes larger pipes than smaller buildings. Ask your landlord for help in locating the source of the lead and for advice on reducing the lead level.

"(2) Try not to cook with, or drink water from the hot water tap. Hot water can dissolve more lead more quickly than cold water. If you need hot water, draw water from the cold tap and heat it on the stove.

"(3) Remove loose lead solder and debris from the plumbing materials installed in newly constructed homes, or homes in which the plumbing has recently been replaced, by removing the faucet strainers from all taps and running the water from 3 to 5 minutes. Thereafter, periodically remove the strainers and flush out any debris that has accumulated over time.

"(4) If your copper pipes are joined with lead solder that has been installed illegally since it was banned in 1986, notify the plumber who did the work and request that he or she replace the lead solder with lead-free solder. Lead solder looks dull gray, and when scratched with a key looks shiny. In addition, notify your State [insert name of department responsible for enforcing the Safe Drinking Water Act in your State] about the violation.

"(5) Determine whether or not the service line that connects your home or apartment to the water main is made of lead. The best way to determine if your service line is made of lead is by contacting us at [insert phone number of water system] hiring a licensed plumber to inspect the line or contacting the plumbing contractor who installed the line. You can identify the plumbing contractor by checking the city's record of building permits which should be maintained in the files of the [insert name of department that issues building permits]. A licensed plumber can at the same time check to see if your home's plumbing contains lead solder, lead pipes, or pipe fittings that contain lead.

The public water system that delivers water to your home should also maintain records of the materials located in the distribution system. If the service line that connects your dwelling to the water main contributes to an exceedance of the Federal tap water lead limit after our corrosion control treatment program is in place, we are required to replace the line. If the line is only partially controlled by the [insert name of the city, county, or water system that controls the line], we are required to provide you with information on how to replace your portion of the service line, and offer to replace that portion of the line at your expense and take a follow-up tap water sample within 14 days of the replacement. Acceptable replacement alternatives include copper, steel, iron, and plastic pipes.

"(6) Have an electrician check your wiring. If grounding wires from the electrical system are attached to your pipes, corrosion may be greater. Check with a licensed electrician or your local electrical code to determine if your wiring can be grounded elsewhere. DO NOT attempt to change the wiring yourself because improper grounding can cause electrical shock and fire hazards.

"The steps described above will reduce the lead concentrations in your drinking water. However, if a water test indicates that the drinking water coming from your tap contains lead concentrations in excess of 10 ppb after flushing, or after we have completed our actions to minimize lead levels, then you may want to take the following additional measures.

"(1) Purchase or lease a home treatment device. Home treatment devices are limited in that each unit treats only the water that flows from the faucet to which it is connected, and all of the devices require periodic maintenance and replacement. Devices such as reverse osmosis systems or distillers can effectively remove lead from your drinking water. Some activated carbon filters may reduce lead levels at the tap, however all lead reduction claims should be investigated. Be sure to check the actual performance of a specific home treatment device before and after installing the unit.

"(2) Purchase bottled water for drinking and cooking.

"In addition to exposure through drinking water, a child at play often comes into contact with sources of lead contamination—like dirt and dust—that rarely affect an adult. It is important to wash children's hands and toys often to reduce these sources of lead exposure.

"You can consult a variety of sources for additional information. Your family doctor or pediatrician can perform a blood test for lead and provide you with more information about the health effects of lead. State and local government agencies that can be contacted include:

"[insert the name of city or county department of public utilities] at [insert phone number] can provide you with information about your community's water supply, and a list of local laboratories that have been certified by EPA for testing water quality;

"[insert the name of city or county department that issues building permits] at [insert phone number] can provide you with information about building permit records that should contain the names of plumbing contractors that plumbed your home; and

"[insert the name of the State Department of Public Health] at [insert phone number] or the [insert the name of the city or county health department] at [insert phone number] can provide you with information about the health effects of lead and how you can have your child's blood tested.

"The following is a list of some State approved laboratories in your area that you can call to have your water tested for lead. [Insert names and phone numbers of at least 2 laboratories].

"(b) CONTENT OF BROADCAST MATERIALS.—A water system shall include the following information in all public service announcements submitted under its lead public education program to television and radio stations for broadcasting:

"Why should everyone want to know the facts about lead and drinking water? Because lead is an extremely dangerous poison that can enter drinking water and pose a significant risk to your health and the health of your children. Lead contamination can impair the intellectual development of young children. That's why I urge you to do what I did. I had my water tested for [insert free or $ per sample]. You can contact the [insert the name of the city or water system] for information on testing and on simple ways to reduce your exposure to lead in drinking water.

"To have your water tested for lead, or to get more information about this public health concern, please call [insert the phone number of the city or water system].

"(c) DELIVERY OF PUBLIC EDUCATION PROGRAM.—(1) In communities where a significant proportion of the population speaks a language other than English, public education materials shall be communicated in the appropriate language(s).

"(2) A community water system that fails to meet the tap water lead limit shall, within 60 days:

"(A) insert notices in each customer's water utility bill containing the information in subsection (a), along with the following alert on the water bill itself in large print:

'SOME HOMES IN THIS COMMUNITY HAVE ELEVATED LEAD LEVELS IN THEIR DRINKING WATER. LEAD CAN POSE A SIGNIFICANT RISK TO YOUR HEALTH AND TO THE HEALTH OF YOUR CHILDREN. PLEASE READ THE ENCLOSED NOTICE FOR FURTHER INFORMATION.',

"(B) submit the information in subsection (a) to the editorial departments of the major daily and weekly newspapers circulated throughout the community,

"(C) deliver pamphlets and/or brochures that contain the public education materials in subsection (a) of this section relating to the health effects of lead and steps to be taken in the home to reduce exposure to lead in drinking water of this section to facilities and organizations, including the following: public and private schools and/or local school boards;

city or county health department; women, infants, and children and/or Head Start Program(s) whenever available; public and private hospitals and/or clinics; pediatricians; family planning clinics; public libraries; and local welfare agencies, and

"(D) submit the public service announcement in subsection (b) to at least 5 of the radio and television stations with the largest audiences that broadcast to the community served by the water system.

"(3) A community water system shall repeat the tasks contained in subsection (c)(2) (A), (B), and (C) every 12 months, and the tasks contained in subsection (c)(2)(D) every 6 months for as long as the system exceeds the tap water lead limit.

"(4) Within 60 days after it exceeds the tap water lead limit, a noncommunity water system shall deliver the public education materials contained in subsection (a) of this section as follows:

"(A) Post informational posters on lead in drinking water in a public place or common area in each of the buildings served by the system.

"(B) Distribute informational pamphlets and/or brochures on lead in drinking water to each person served by the noncommunity water system.

"(5) A noncommunity water system shall repeat the tasks contained in subsection (c)(4) of this section at least once during each calendar year in which the system exceeds the tap water lead limit.

"(6) A water system may discontinue delivery of public education materials if the system has met the tap water lead limit during the most recent 6-month monitoring period conducted pursuant to section 1418G. Such a system shall recommence public education in accordance with this section if it subsequently exceeds the tap water lead limit during any monitoring period.

"(d) SUPPLEMENTAL MONITORING AND NOTIFICATION OF RESULTS.—A water system that fails to meet the tap water lead limit shall offer to sample the tap water of any customer who requests it. The system is not required to pay for collecting or analyzing the sample, nor is the system required to collect and analyze the sample itself.

"(e) NOTIFICATION OF VIOLATIONS.—

"(1) IN GENERAL.—A water system which fails to comply with a water maximum contaminant level for lead or any other requirement under this subpart shall notify persons served by such system of such violation in the manner provided for public notification of violations of maximum contaminant levels and treatment techniques in regulations of the Administrator under this part.

"(2) MANDATORY HEALTH EFFECTS LANGUAGE.—When providing the information on potential adverse health effects in notices of violation, the water system shall include the language in subsection (a) relating to the health effects of lead.

"SEC. 1418G. MONITORING REQUIREMENTS FOR LEAD IN TAP WATER.

"(a) SAMPLE SITE LOCATION.—(1) By the applicable date for commencement of monitoring under subsection (d)(1) of this section, each water system shall complete a materials evaluation of its distribution system in order to identify a pool of targeted sampling sites that meets the requirements of this section, and which is sufficiently large to ensure that the water system can collect the number of lead tap samples required in subsection (c). All sites from which first draw samples are collected shall be selected from this pool of targeted sampling sites. Sampling sites may not include faucets that have point-of-use or point-of-entry treatment devices designed to remove inorganic contaminants.

"(2) A water system shall use the information that it is required to collect under regulations promulgated by the Administrator under this part relating to special monitoring for corrosivity characteristics when conducting a materials evaluation. When an evaluation of the information collected pursuant to such regulations is insufficient to locate the requisite number of lead sampling sites that meet the targeting criteria in this subsection, the water system shall review each source of information listed below in order to identify a sufficient number of sampling sites and in addition, the system shall seek to collect such information where possible in the course of its normal operations (e.g. checking service line materials when reading water meters or performing maintenance activities):

"(A) All plumbing codes, permits, and records in the files of the building department which indicate the plumbing materials that are installed within publicly and privately owned structures connected to the distribution system.

"(B) All inspections and records of the distribution system that indicate the material composition of the service connections that connect a structure to the distribution system.

"(C) All existing water quality information, which includes the results of all prior analyses of the system or individual structures connected to the system, indicating locations that may be particularly susceptible to high lead concentrations.

"(3) The sampling sites selected for a community water system's sampling pool ('tier 1 sampling sites') shall consist of single family structures that (A) contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or (B) are served by a lead service line. When multiple-family residences comprise at least 20 percent of the structures served by a water system, the system may include these types of structures in its sampling pool.

"(4) Any community water system with insufficient tier 1 sampling sites shall complete its sampling pool with 'tier 2 sampling sites', consisting of buildings, including multiple-family residences that: (A) contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or (B) are served by a lead service line.

"(5) Any community water system with insufficient tier 1 and tier 2 sampling sites shall complete its sampling pool with 'tier 3 sampling sites', consisting of single family structures that contain copper pipes with lead solder installed before 1983.

"(6) The sampling sites selected for a noncommunity water system ('tier 1 sampling sites') shall consist of buildings that: (A) contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or (B) are served by a lead service line.

"(7) A noncommunity water system with insufficient tier 1 sites that meet the targeting criteria in paragraph (6) of subsection (a) shall complete its sampling pool with sampling sites that contain copper pipes with lead solder installed before 1983.

"(8) Any water system whose sampling pool does not consist exclusively of tier 1 sites shall demonstrate in a letter submitted to the State under section 1418K(a)(2) why a review of the information listed in subsection (a)(2) was inadequate to locate a sufficient number of tier 1 sites. Any community water system which includes tier 3 sampling sites in its sampling pool shall demonstrate in such a letter why it was unable to locate a sufficient number of tier 1 and tier 2 sampling sites.

"(9) Any water system whose distribution system contains lead service lines shall draw 50 percent of the samples it collects during each monitoring period from sites that contain lead pipes, or copper pipes with lead solder, and 50 percent of those samples from sites served by a lead service line. A water system that cannot identify a sufficient number of sampling sites served by a lead service line shall demonstrate in a letter submitted to the State why the system was unable to locate a sufficient number of such sites. Such a water system shall collect lead service line samples from all of the sites identified as being served by such lines.

"(b) SAMPLE COLLECTION METHODS.—(1) All tap samples for lead collected in accordance with this subpart (but not lead service line samples collected under section 1418E) shall be first draw samples.

"(2) Each first-draw tap sample for lead shall be one liter in volume and have stood motionless in the plumbing system of each sampling site for at least 6 hours. First draw samples from residential housing shall be collected from the cold-water kitchen tap or bathroom sink tap. First-draw samples from a nonresidential building shall be collected at an interior tap from which water is typically drawn for consumption. First draw samples may be collected by the system or the system may allow residents to collect first draw samples after instructing the residents of the sampling procedures specified in this paragraph. If a system allows residents to perform sampling, the system may not challenge, based on alleged errors in sampling collection, the accuracy of sampling results.

"(3) Each service line sample shall be 1 liter in volume and have stood motionless in the lead service line for at least 6 hours. Lead service line samples shall be collected in 1 of the following 3 ways:

"(A) At the tap after flushing the volume of water between the tap and the lead service line. The volume of water shall be calculated based on the interior diameter and length of the pipe between the tap and the lead service line.

"(B) Tapping directly into the lead service line.

"(C) If the sampling site is a building constructed as a single-family residence, allowing the water to run until there is a significant change in temperature which would be indicative of water that has been standing in the lead service line.

"(4) A water system shall collect each first draw tap sample from the same sampling site from which it collected a previous sample. If, for any reason, the water system cannot gain entry to a sampling site in order to collect a follow-up tap sample, the system may collect the follow-up tap sample from another sampling site in its sampling pool as long as the new site meets the same targeting criteria, and is within reasonable proximity of the original site.

"(c) NUMBER OF SAMPLES.—Water systems shall collect at least one sample during each monitoring period specified in subsection (d) from the number of sites listed in the first column below ('standard monitoring'). A system conducting reduced monitoring under subsection (d)(2) may collect one sample from the number of sites specified in the second column below during each monitoring period specified in subsection (d)(2).

“System Size (# People Served)	# of sites (Standard Monitoring)	# of sites (Reduced Monitoring)
100,000	100	50
10,001–100,000	60	30
3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
100	5	5

“(d) Timing of Monitoring.—

“(1) Standard monitoring.—Monitoring required under this section for lead concentrations in tap water shall commence 6 months after the enactment of this subpart and shall occur at 6-month intervals thereafter, except as provided in paragraph (2).

“(2) Reduced monitoring.—(A) Any water system that meets the tap water lead limit during each of 2 consecutive 6-month monitoring periods may reduce the number of samples in accordance with subsection (c) of this subsection, and reduce the frequency of sampling to once per year.

“(B) Any water system that meets the tap water lead limit during 3 consecutive years of monitoring may reduce the frequency of monitoring for lead from annually to once every 3 years.

"(C) A water system that reduces the number and frequency of sampling shall collect these samples from sites included in the pool of targeted sampling sites identified in subsection (a). Systems sampling annually or less frequently shall conduct the lead tap sampling during the month of June, July, August, or September.

"(D) Any water system subject to reduced monitoring that exceeds the tap water lead limit shall immediately resume sampling in accordance with subsection (d)(1) and collect the number of samples specified for standard monitoring under subsection (c).

"(e) ADDITIONAL MONITORING BY SYSTEMS.—The results of any monitoring conducted in addition to the minimum requirements of this section shall be considered by the system and the State in making any determinations under this subpart.

"SEC. 1418H. MONITORING REQUIREMENTS FOR WATER QUALITY PARAMETERS.

"All large water systems and all small and medium-size systems that exceed the tap water lead limit shall monitor water quality parameters in addition to lead in accordance with this section.

"(a) GENERAL REQUIREMENTS.—

"(1) SAMPLE COLLECTION METHODS.—(A) Tap samples shall be representative of water quality throughout the distribution system taking into account the number of persons served, the different sources of water, the different treatment methods employed by the system, and seasonal variability. Tap sampling under this section is not required to be conducted at taps targeted for lead sampling under section 1418G(a).

"(B) Samples collected at the entry point(s) to the distribution system shall be from locations representative of each source after treatment. If a system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (i.e., when water is representative of all sources being used).

"(2) NUMBER OF SAMPLES.—(A) Systems shall collect 2 tap samples for applicable water quality parameters during each monitoring period specified under subsections (b) through (e) of this section from the following number of sites:

System Size (# People Served)	# of Sites for Water Quality Parameters
100,000	25
10,001–100,000	10
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
100	1

"(B) Systems shall collect two samples for each applicable water quality parameter at each entry point to the distribution system during each monitoring period specified in subsection (b). During each monitoring period specified in subsections (c) through (e) of this section, systems shall collect one sample for each applicable water quality parameter at each entry point to the distribution system.

"(b) Initial Sampling.—All large water systems shall measure the applicable water quality parameters as specified below at taps and at each entry point to the distribution system during each 6-month monitoring period specified in section 1418G(d)(1). All small- and medium-size systems shall measure the applicable water quality parameters at the locations specified below during each 6-month monitoring period specified in section 1418G(d)(1) during which the system exceeds the tap water lead limit.

"(1) At taps: pH; alkalinity; orthophosphate, when an inhibitor containing a phosphate compound is used; silica, when an inhibitor containing a silicate compound is used; calcium; conductivity; and water temperature.

"(2) At each entry point to the distribution system: all of the applicable parameters listed in paragraph (1) above.

"(c) MONITORING AFTER INSTALLATION OF CORROSION CONTROL.—Any system which installs optimal corrosion control treatment pursuant to section 1418B(d)(4) or section 1418B(e)(5) shall measure the water quality parameters at the locations and frequencies specified below during each 6-month monitoring period following such installation.

"(1) At taps, two samples for: pH; alkalinity; orthophosphate, when an inhibitor containing a phosphate compound is used; silica, when an inhibitor containing a silicate compound is used; calcium, when calcium carbonate stabilization is used as part of corrosion control.

"(2) At each entry point to the distribution system, one sample every two weeks for: pH; when alkalinity is adjusted as part of optimal corrosion control, a reading of the dosage rate of the chemical used to adjust alkalinity, and the alkalinity concentration; and when a corrosion inhibitor is used as part of optimal corrosion control, a reading of the dosage rate of the inhibitor used, and the concentration of orthophosphate or silica (whichever is applicable).

"(d) MONITORING AFTER STATE SPECIFIES WATER QUALITY PARAMETER VALUES FOR OPTIMAL CORROSION CONTROL.—After the State specifies the values for applicable water quality control parameters reflecting optimal corrosion control treatment under section 1418C(f), all systems shall measure the applicable water quality parameters in accordance with subsection (c) of this section during each 6-month monitoring period after such specification. The system may take a confirmation sample for any water quality parameter value no later than 3 days after the first sample. If a confirmation sample is taken, the result must be averaged with the first sampling result and the average must be used for any compliance determinations under section 1418C(g). States have discretion to delete results of obvious sampling errors from this calculation.

"(e) REDUCED MONITORING.—(1) Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment during each of two consecutive 6-month monitoring periods under subsection (d) of this section shall continue monitoring at the entry point(s) to the distribution system as specified in subsection (c)(2) of this section. Such system may collect two tap samples for applicable water quality parameters from the following reduced number of sites during each 6-month monitoring period.

“System Size (# of People Served	Reduced # of Sites for Water Quality Parameters
>100,000	10
10,001 to 100,000	7
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
≤100	1

“(2) Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the State under section 1418C(f) during 3 consecutive years of monitoring may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in paragraph (1) from every 6 months to annually.

“(3) A water system that conducts sampling annually shall collect these samples evenly throughout the year so as to reflect seasonal variability.

“(4) Any water system subject to reduced monitoring frequency that fails to operate within the range of values for the water quality parameters specified by the State under section 1418C(f) shall resume tap water sampling in accordance with the number and frequency requirements in subsection (c) of this section.

"(f) ADDITIONAL MONITORING BY SYSTEMS.—The results of any monitoring conducted in addition to the minimum requirements of this section shall be considered by the system and the State in making any determinations (i.e., determining concentrations of water quality parameters) under this section or section 1418C.

"SEC. 1418I. MONITORING REQUIREMENTS FOR LEAD IN SOURCE WATER.

"(a) SAMPLE LOCATION, COLLECTION METHODS, AND NUMBER OF SAMPLES.—(1) Each water system shall collect lead source water samples in accordance with the requirements regarding sample location, number of samples, and collection methods specified in regulations of the Administrator under subpart 1 relating to inorganic chemical sampling.

"(2) Where the results of sampling indicate an exceedance of the source water maximum contaminant level for lead, the State may require that 1 additional sample be collected as soon as possible after the initial sample was taken (but not to exceed 2 weeks) at the same sampling point. If a State-required confirmation sample is taken for lead, then the results of the initial and confirmation sample shall be averaged in determining compliance with the source water maximum contaminant level for lead. Any sample value below the detection limit shall be considered to be zero. Any value above the detection limit but below the PQL shall either be considered as the measured value or be considered one-half the PQL.

"(b) MONITORING FREQUENCY.—Each system shall collect one source water sample from each entry point to the distribution system within 6 months after the enactment of this subpart and at 6 month intervals thereafter.

"(c) REDUCED MONITORING FREQUENCY.—(1) A water system using only ground water which demonstrates that finished drinking water entering the distribution system has been maintained below the source water maximum contaminant level for lead during at least 3 consecutive compliance periods under subsection (b) of this section may reduce the monitoring frequency for lead to once every 2 years.

"(2) A water system using surface water (or a combination of surface and ground waters) which demonstrates that finished drinking water entering the distribution system has been maintained below the source water maximum contaminant level for lead for at least 3 consecutive years may reduce the monitoring frequency in subsection (b) of this section to once every 2 years.

"(3) A water system that uses a new source of water is not eligible for reduced monitoring for lead until concentrations in samples collected from the new source during

3 consecutive monitoring periods are below the source water maximum contaminant level for lead.

"SEC. 1418J. ANALYTICAL METHODS.

"Analyses for lead, copper, pH, conductivity, calcium, alkalinity, orthophosphate, silica, and temperature shall be conducted using the methods specified in 40 C.F.R. 141.89, as may be modified by the Administrator from time to time. For purposes of this title and regulations thereunder, where it is not economically or technologically feasible to ascertain the level of a contaminant in drinking water which is as close to the maximum contaminant level goal as feasible, the Administrator shall establish a treatment technique for such contaminant in accordance with section 1412(b)(7). The Administrator shall have no authority in such cases to promulgate national primary drinking water regulations under this title based upon the level of a contaminant which is economically or technologically feasible to ascertain. Any such regulations in effect on the date of enactment of this subpart which are inconsistent with the provisions of the preceding sentence (including any regulations based on a Practical Quantification Level) shall be revised by the Administrator within 6 months after the enactment of this subpart to conform to such requirements. Such existing inconsistent regulations shall cease to apply on the date on which the revised regulations take effect.

"SEC. 1418K. REPORTING REQUIREMENTS.

"All water systems shall report all of the following information to the State in accordance with this section.

"(a) REPORTING REQUIREMENTS FOR TAP WATER MONITORING FOR LEAD AND FOR WATER QUALITY PARAMETERS MONITORING.—(1) A water system shall report the information specified below for all tap water samples within the first 10 days following the end of each applicable monitoring period specified in section 1418G and 1418H (i.e. every 6 months, annually, or every 3 years).

"(A) The results of all tap samples for lead, including the location of each site and the criteria under paragraph (3), (4), (5), (6) and/or (7) of section 1418G(a) under which the site was selected for the system's sampling pool.

"(B) A certification that each first draw sample collected by the water system is one-liter in volume and, to the best of its knowledge, has stood motionless in the service line, or in the interior plumbing of a sampling site, for at least 6 hours.

"(C) Where residents collected samples, a certification that each tap sample collected by the residents was taken after the water system informed them of proper sampling procedures.

"(D) The results of all tap water samples for lead.

"(E) With the exception of initial tap sampling conducted pursuant to this section, the system shall designate any site which was not sampled during previous monitoring periods, and include an explanation of why sampling sites have changed.

"(F) The results of all tap samples for pH, and where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica collected under subsections (b) through (e) of section 1418H.

"(G) The results of all samples collected at the entry point to the distribution system for applicable water quality parameters under subsections (b) through (e) of section 1418H.

"(2) By the applicable date specified in section 1418G(d)(1) for commencement of monitoring, each community water system which does not complete its targeted sampling pool with tier 1 sampling sites meeting the criteria in section 1418G(a)(3) shall send a letter to the State justifying its selection of tier 2 and/or tier 3 sampling sites under section 1418G (a)(4) and/or (a)(5).

"(3) By the applicable date specified in section 1418G(d)(1) for commencement of monitoring, each noncommunity water system which does not complete its sampling pool with tier 1 sampling sites meeting the criteria in section 1418G(a)(6) shall send a letter to the State justifying its selection of sampling sites under section 1418G(a)(7).

"(4) By the applicable date specified in section 1418G(d)(1) for commencement of monitoring, each water system with lead service lines that is not able to locate the number of sites served by such lines required under section 1418G(a)(9) shall send a letter to the State demonstrating why it was unable to locate a sufficient number of such sites based upon the information listed in section 1418G(a)(2).

"(b) SOURCE WATER MONITORING REPORTING REQUIREMENTS.—(1) A water system shall report the sampling results for all source water samples collected in accordance with section 1418I within the first 10 days following the end of each source water monitoring period (i.e., annually, per compliance period, per compliance cycle) specified in section 1418I.

"(2) With the exception of the first round of source water sampling conducted pursuant to section 1418I, the system shall specify any site which was not sampled during previous monitoring periods, and include an explanation of why the sampling point has changed.

"(c) CORROSION CONTROL TREATMENT REPORTING REQUIREMENTS.—By the applicable dates under section 1418B systems shall report the following information:

"(1) For systems demonstrating that they have already optimized corrosion control, information required in section 1418B(b) (2) or (3).

"(2) For systems required to optimize corrosion control, their recommendation regarding optimal corrosion control treatment under section 1418C(a).

"(3) For systems required to evaluate the effectiveness of corrosion control treatments under section 1418C(c), the information required by that paragraph.

"(4) For systems required to install optimal corrosion control designated by the State under section 1418C(d), a letter certifying that the system has completed installing that treatment.

"(d) LEAD SERVICE LINE REPLACEMENT REPORTING REQUIREMENTS.—Systems shall report the following information to the State to demonstrate compliance with the requirements of section 1418E:

"(1) Within 12 months after a system exceeds the tap water lead limit in sampling referred to in section 1418E(a), the system shall demonstrate in writing to the State that it has conducted a materials evaluation, including the evaluation in section 1418G(a), to identify the initial number of lead service lines in its distribution system, and shall provide the State with the system's schedule for replacing lead service lines.

"(2) Within 12 months after a system exceeds the tap water lead limit in sampling referred to in section 1418E(a), and every 12 months thereafter, the system shall demonstrate to the State in writing that the system has replaced in the previous 12 months the number of lead service lines in its distribution system required by section 1418E.

"(3) The annual letter submitted to the State under subsection (d)(2) shall contain the following information:

"(A) The number of lead service lines scheduled to be replaced during the previous year of the system's replacement schedule.

"(B) The number and location of each lead service line replaced during the previous year of the system's replacement schedule.

"(C) If measured, the water lead concentration and location of each lead service line sampled, the sampling method, and the date of sampling.

"(4) As soon as practicable, but in no case later than 3 months after a system has completed the installation of optimal corrosion control treatment and subsequently been found to exceed the tap water lead limit in any sampling referred to in section 1413(a), any system seeking to rebut the presumption that it has control over the entire lead service line pursuant to section 1418E(d) shall submit a letter to the State describing the legal authority (e.g., State statutes, municipal ordinances, public service contracts, or other applicable legal authority) which limits the system's control over the service lines and the extent of the system's control.

"(e) PUBLIC EDUCATION PROGRAM REPORTING REQUIREMENTS.—(1) By December 31 of each year, any water system that is subject to the public education requirements in section 1418F shall submit a letter to the State demonstrating that the system has delivered the public education materials that meet the content requirements in section 1418F (a) through (d) and the delivery requirements in section 1418F(c). This information shall include a list of all the newspapers, radio stations, television stations, facilities, and organizations to which the system delivered public education materials during the previous year. The water system shall submit the letter required by this paragraph annually for as long as it exceeds the tap water lead limit.

"(2) By December 31 of each year any water system subject to the public notification requirements of section 1418F(e) shall submit a letter to the State demonstrating compliance with the requirements of section 1418F(e).

"(f) REPORTING OF ADDITIONAL MONITORING DATA.—Any system which collects sampling data in addition to that required by this subpart shall report the results to the State by the end of the applicable monitoring period under sections 1418G, 1418H, and 1418I during which the samples are collected.

"(g) ANNUAL COMPLIANCE CERTIFICATION.—All public water systems shall submit a letter to the State by March 1 of each year certifying the extent to which the system was in compliance with each applicable provision of this subpart during the preceding calendar year.

"SEC. 1418L. RECORDKEEPING REQUIREMENTS.

"Any system subject to the requirements of this subpart shall retain on its premises original records of all sampling data and analyses, reports, surveys, letters, evaluations, schedules, State determinations, and any other information required by this subpart. Each water system shall retain the records required by this section for no fewer than 12 years.

"SEC. 1418M. IMPLEMENTATION REQUIREMENTS.

"(a) RECORDS KEPT BY STATES.—Each State shall maintain for not less than 10 years files for each public water system which contain records of currently applicable or most recent State determinations, including all supporting information and an explanation of the technical basis for each of the following decisions, made under the preceding provisions of this subpart:

"(1) Decisions to require a water system to conduct corrosion control treatment studies.

"(2) Designations of optimal corrosion control treatment.

"(3) Designations of optimal water quality parameters.

"(4) Decisions to modify a public water system's optimal corrosion control treatment or water quality parameters.

"(5) Determinations that a system does not control entire lead service lines.

"(6) Determinations establishing or failing to establish a shorter lead service line replacement schedule than required by section 1418E.

"(7) Records of reports and any other information submitted by water systems under section 1418K.

"(8) Records of State activities, and the results thereof, to verify compliance with State determinations issued under section 1418C(f) and 1418C(h) and compliance with lead service line replacement schedules under section 1418E.

"(9) Records of each system's currently applicable or most recently designated monitoring requirements.

If, for the records identified in paragraphs (1) through (6) of this subsection, no change is made to a State decision during a 12 year retention period, the State shall maintain the record until a new decision, determination, or designation has been issued.

"(b) SPECIAL REPORTS.—Each State shall submit to the Administrator by May 15, August 15, November 15, and February 15 of each year the following information relating to each system's compliance with the requirements for lead under this subpart during the preceding calendar quarter. Specifically, States shall report the name and Public Water System identification number of—

"(1) each public water system which exceeded any maximum contaminant level for lead or tap water lead limit and the date upon which the exceedance occurred;

"(2) each public water system required to complete the corrosion control evaluations specified in section 1418C(c) and the date the State received the results of the evaluations from each system;

"(3) each public water system for which the State has designated optimal corrosion control treatment under section 1418C(d), the date of the determination, and each system that completed installation of treatment as certified under section 1418K(c)(4);

"(4) each public water system for which the State has designated optimal water quality parameters under section 1418C(f) and the date of the determination; and

"(5) each public water system required to begin replacing lead service lines as specified in section 1418E, each public water system for which the State has established a replacement schedule under section 1418E(f), and each system reporting compliance with its replacement schedule under section 1418K(d)(2).

"(c) SPECIAL PRIMACY REQUIREMENTS.—An application for approval of a State program revision which adopts the requirements specified in this section must contain (in addition to the general primacy requirements enumerated elsewhere in this part, including the requirement that State regulations be at least as stringent as the Federal requirements) a description of how the State will accomplish the following program requirements:

"(1) SECTION 1418C(d), (f), AND (h).—Designating optimal corrosion control treatment methods, optimal water quality parameters and modifications thereto.

"(2) SECTION 1418K(d).—Verifying compliance with lead service line replacement schedules and of Public Water System demonstrations of limited control over lead service lines.

"(d) AVAILABILITY OF RECORDS.—All records, data, and reports collected, maintained, received, or otherwise developed by States pursuant to the requirements of this subpart shall be made available by the State to the public upon request, unless making such records, data, or reports available would divulge trade secrets or secret processes.

"SEC. 1418N. EPA REVIEW OF IMPLEMENTATION OF NPDWR FOR LEAD.

"(a) EPA REVIEW.—Pursuant to the procedures in this section, the Administrator shall review State determinations required to be made after notice and opportunity for comment under this subpart and shall issue an order establishing a Federal determination where—

"(1) a State has failed to issue a determination by the applicable deadline; or

"(2) a State has issued a determination that does not comply with the requirements of this subpart.

"(b) INFORMATION USED BY STATE.—The State shall forward to the Administrator each State determination referred to in subsection (a) and all information that was considered by the State in making its determination, including public comments, if any, within 60 days of the State determination.

"(c) PROPOSED REVIEW OF STATE DETERMINATIONS.—(1) Where the conditions in subsection (a)(1) or (a)(2) are met, the Administrator shall issue a proposed review order within 90 days of the State action or failure to act which shall—

"(A) identify the public water system(s) affected, the State determination being reviewed and the provisions of State and/or Federal law at issue;

"(B) identify the determination that the State failed to carry out by the applicable deadline, or identify the particular provisions of the State determination which, in the Administrator's judgment, fail to carry out applicable requirements of this subpart and explain the basis for the Administrator's conclusion;

"(C) identify the treatment requirements which the Administrator proposes to apply to the affected system(s), and explain the basis for the proposed requirements; and

"(D) request public comment on the proposed order and the supporting record.

"(2) The Administrator shall provide notice of the proposed review order by:

"(A) mailing the proposed order to the affected public water system(s), the State agency whose order is being reviewed, and any other parties of interest known to the Administrator; and

"(B) publishing a copy of the proposed order in a newspaper of general circulation in the affected communities.

"(3) The Administrator shall make available for public inspection during the comment period the record supporting the proposed order, which shall include all of the information submitted by the State to the Administrator under subsection (b) of this section, all other studies, monitoring data and other information considered by the Administrator in developing the proposed order.

"(d) Final Review Order.—(1) Based upon review of all information obtained regarding the proposed review order, including public comments, the Administrator shall issue a final review order within 120 days after issuance of the proposed order which affirms, modifies, or withdraws the proposed order. If the final order modifies or withdraws the proposed order, the final order shall explain the reasons supporting the change.

"(2) The record of the final order shall consist of the record supporting the proposed order, all public comments, all other information considered by the Administrator in issuing the final order and a document responding to all significant public comments submitted on the proposed order. If new points are raised or new material supplied during the public comment period, the Administrator may support the responses on those matters by adding new materials to the record. The record shall be complete when the final order is issued.

"(3) Notice of the final order shall be provided by mailing the final order to the affected system(s), the State, and all parties who commented on the proposed order.

"(4) Upon issuance of the final order, its terms constitute requirements of the national primary drinking water regulation for lead until such time as the Administrator issues a new order (which may include recision of the previous order) pursuant to the procedures in this section. Such requirements shall supersede any inconsistent treatment requirements established by the State pursuant to the national primary drinking water regulations for lead.

"(5) The Administrator may not issue a final order to impose conditions less stringent than those imposed by the State.

"(e) FINALITY.—Action of the State with respect to which review by the Administrator is required under this section shall not be subject to judicial review in any civil or criminal proceeding for enforcement.

"(f) PRIMACY STATES.—All references in this subpart to the 'State' refer to the State which has primary enforcement responsibility under this title for the public water system concerned. If a State does not have primary enforcement responsibility under this title for public water systems in that State, the authorities and responsibilities vested in the State under this section shall be vested in the Administrator and all references in this section to the 'State' shall be treated as references to the 'Administrator'. The Administrator shall promptly withdraw primary enforcement responsibility under this title in the case of any State which is not fully implementing the requirements of this title.

"SEC. 1418O. VARIANCES AND EXEMPTIONS.

"(a) USE OF BOTTLED WATER, ETC.—The State may require a public water system to use bottled water, point-of-use devices, point-of-entry devices, or other means as a condition of granting a variance or exemption from the requirements of national primary drinking water regulations under this part to avoid an unreasonable risk to health. The State may require a public water system to use bottled water and point-of-use devices or other means, but not point-of-entry devices, as a condition for granting an exemption from corrosion control treatment requirements for lead in sections 1418B and 1418C to avoid an unreasonable risk to health. The State may require a public water system to use point-of-entry devices as a condition for granting an exemption from the source water and lead service line replacement requirements for lead under section 1418D or 1418E to avoid an unreasonable risk to health.

"(b) PUBLIC WATER SYSTEMS USING BOTTLED WATER.—Public water systems that use bottled water as a condition for receiving a variance or an exemption from the national primary drinking water regulations under this part or an exemption from the requirements of sections 1418B through 1418E must meet the requirements specified in either paragraph (1) or (2) and paragraph (3) of this subsection:

"(1) The State must require and approve a monitoring program for bottled water. The public water system must develop and put in place a monitoring program that provides reasonable assurances that the bottled water meets all maximum contaminant levels and does not contain lead content in excess of 10 parts per billion. The public water system must monitor a representative sample of the bottled water for all contaminants regulated under this part during the first 3-month period that it supplies the bottled water to the public, and annually thereafter. Results of the monitoring program shall be provided to the State annually.

"(2) The public water system must receive a certification from the bottled water company that the bottled water supplied has been taken from an 'approved source' as defined by rule by the Administrator of the Food and Drug Administration; the bottled water company has conducted monitoring in accordance with such rules; and the bottled water does not exceed any maximum contaminant levels or quality limits as set out in such rules. The public water system shall provide the certification to the State the first quarter after it supplies bottled water and annually thereafter. At the State's option a public water system may satisfy the requirements of this subsection if an approved monitoring program is already in place in another State.

"(3) The public water system is fully responsible for the provision of sufficient quantities of bottled water to every person supplied by the public water system via door-to-door bottled water delivery.

"(c) POINT OF ENTRY DEVICES.—In requiring the use of a point-of-entry device as a condition for granting an exemption from the national public drinking water regulation for lead under section 1418D or 1418F, the State must be assured that use of the device will not cause increased corrosion of lead bearing materials located between the device and the tap that could increase contaminant levels at the tap.".

(b) EPA ACTION LEVEL REGULATIONS.—The Congress hereby finds and declares that the establishment by the Environmental Protection Agency of action levels in regulations regarding lead and copper in drinking water is inconsistent with title XIV of the Public Health Service Act because it does not provide the protection for public health mandated by section 1412 of that title. The Administrator may not hereafter promulgate any national primary drinking water regulations under such title based on an action level in lieu of a maximum contaminant level or a treatment technique as prescribed by section 1412 of that title, and any such regulations promulgated before the enactment of this Act, including regulations relating to lead and copper in drinking water, are hereby declared to be null and void on the date 30 days after the enactment of this Act (except as otherwise provided in the first sentence of section 1418J of that title, relating to analytical methods). In the case of any contaminant, other than lead, for which regulations are declared null and void under this subsection, the Administrator shall promulgate national primary drinking water regulations under subpart 1 of title XIV of the Public Health Service Act which are consistent with the requirements of section 1412 of that title within 6 months after the enactment of this Act.

(c) Classes of Public Water Systems.—Except as specifically provided in sections 1415 and 1416 and subpart B of title XIV of the Public Health Service Act (the Safe Drinking Water Act), nothing in such title shall be construed to authorize the Administrator of the Environmental Protection Agency or a State with primary enforcement responsibility under that title to regulate any class of public water systems in a manner that may be less protective of public health than is required for all other public water systems.

(d) SCHOOL DRINKING WATER CONTAINING LEAD.—

(1) TESTING.—(A) Section 1464(d)(1) of the Public Health Service Act (the Safe Drinking Water Act; 42 U.S.C. 300j–23) is amended by adding the following at the end thereof: "Within 18 months after the enactment of the Lead Contamination Control Act Amendments of 1991 each local education agency shall complete testing, in accordance with the protocol under subsection (b), for lead contamination in drinking water from coolers and in other drinking water outlets (including outlets used in food preparation) at schools under the jurisdiction of such agency.".

"(B) Section 1464(b) of such Act is amended by adding the following at the end: "The Administrator shall revise the guidance document and the protocol published under this subsection within 6 months after the enactment of the Lead Contamination Control Act Amendments of 1991. Such revision shall, at a minimum, provide for follow-up sampling and recommend remedial steps whenever the lead concentration in any drinking water outlet exceeds 10 parts per billion."

(2) PUBLIC AVAILABILITY.—Section 1464(d)(2) of the Public Health Service Act (the Safe Drinking Water Act; 42 U.S.C. 300j--24(d)(2)) is amended by inserting the following before the period at the end thereof: "and, if the testing results show an tap water lead concentrations in excess of 10 parts per billion, the local education agency shall, within 90 days after completion of such testing, provide to all teachers and other school personnel at the school and to parents (and guardians) of children enrolled in the school a summary of the testing results, a lead disclosure statement, and a description of the actions the agency has taken, or will take, in response to such test results, together with a schedule for such actions. The local education agency shall simultaneously provide a copy of such materials to the agency with primary enforcement responsibility for the public water system which serves the school. Such agency with primary enforcement responsibility shall promptly (but not later than 3 months after receipt of such materials) transmit to the Administrator a summary of such test results, the response actions taken, and proposed response actions. The Administrator, in consultation with the Centers for Disease Control, shall, within 1 year after the enact-

ment of the Lead Contamination Control Act Amendments of 1991, publish a lead disclosure statement to be used for purposes of this subsection. Such statement shall explain the risks to children from exposure to lead in school drinking water and describe potential remedial actions.".

(3) FEDERAL ASSISTANCE.—(A) Section 1465(a) of the Public Health Service Act (the Safe Drinking Water Act; 42 U.S.C. 300j–25(a)) is amended by striking "may" in the last sentence and inserting "shall only " and by adding the following before the period at the end thereof: ", except that not more than 5 percent of the grants made to any State for purposes of this section in any fiscal year may be retained by the State for purposes of administering the grant program under this section. Reimbursement shall be made to local education agencies on the basis of financial need and the severity of the drinking water contamination at the schools concerned".

(B) Section 1465(c) of such Act is amended by striking "and" and by inserting the following before the period at the end thereof: "and $30,000,000 for each of the 5 fiscal years thereafter.".

(4) CIVIL PENALTIES.—Section 1464 of the Public Health Service Act (the Safe Drinking Water Act; 42 U.S.C. 300j–24(d)(2)) is amended by adding the following new subsection at the end thereof:

"(e) ENFORCEMENT.—Any local education agency which fails or refuses to comply with the requirements of this section shall be subject to a civil penalty in the amount of $10,000 for each such violation. The Administrator may bring an action in the appropriate United States district court to assess and collect such penalty or to enjoin any such violation. The court in any action against a local education agency under this section or section 1449 shall have discretion to order that all civil penalties collected be used to reimburse the local education agency for the costs of testing and remedying lead contamination in drinking water.".

(5) COOLERS CONTAINING LEAD.—

(A) LIST.—Section 1463(a) of the Public Health Service Act (the Safe Drinking Water Act; 42 U.S.C. 300j–23(a)) is amended by adding the following at the end thereof: "At a minimum, the Administrator shall revise and republish the list within 1 year after the date of the enactment of the Lead Contamination Control Act Amendments of 1991 to ensure that all drinking water coolers in use or being manufactured as of that date which are not lead free are included on the list."

(B) RECALL ORDER.—Section 1462 of such Act is amended by striking "such order" in the last sentence thereof and inserting "each such order" and by adding the following before such last sentence: "The Commission shall issue a new order within 1 year after the list is revised under section 1463 to require manufacturers and importers of all coolers on such list to repair, replace, or recall and provide a refund for such coolers."

(C) CLARIFYING AMENDMENT.—Section 1461(3)(B) of such Act is amended to read as follows:

"(B) the owner of any building used as a school.".

(e) LEAD PIPES, SOLDER, AND FLUX.—

(1) IN GENERAL.—Section 1417 of the Public Health Service Act (the Safe Drinking Water Act; 42 U.S.C.300g–6) is amended as follows:

(A) Subsection (a) is amended—

(i) by inserting "pipe fitting, fixture," after "pipe,";

(ii) by striking out so much of subparagraph (B) as follows "consumption" and inserting in lieu thereof a comma; and

(iii) by adding the following at the end thereof "Effective 1 year after the enactment of the Lead Contamination Control Act Amendments of 1991, it shall be unlawful (i) for any person to introduce into commerce any pipe, pipe fitting or fixture that is not lead free, (ii) for persons engaged in the business of selling plumbing supplies to sell solder or flux which is not lead free, or (iii) for any person to introduce into commerce any solder or flux which is not lead free unless such solder or flux bears a prominent label stating that it is illegal to use such solder or flux in the installation or repair of any plumbing providing water for human consumption.

(B) Subsection (d) is amended by adding the following at the end thereof: "Effective 4 years after the enactment of the Lead Contamination Control Act Amendments of 1991, when used with respect to pipes, pipe fittings, fixtures, solder, and flux, such term refers to pipes, pipe fittings, fixtures, solder, and flux that either have no lead content or that have been certified as lead free by the Administrator. The Administrator may certify a pipe, pipe fitting, fixture, solder, or flux as lead free only if the Administrator determines that (A) such pipe, pipe fitting, fixture, solder, or flux cannot feasibly be manufactured without lead or with a lower lead content, (B) such product meets the definition of lead free under paragraph (1) or (2), as applicable, and (C) use of such pipe, pipe fitting, fixture, solder, or flux, when new and after 30 days of usage, will not cause tap water lead concentrations to exceed 10 parts per billion (ppb), as demonstrated pursuant to leach tests using corrosive water and dwell periods of at least 10 hours.".

(2) ENFORCEMENT.—Title XIV of the Public Health Service Act (the Safe Drinking Water Act; 42 U.S.C. 300g–6) is amended as follows:

(A) Subsection (c) of section 1417 is amended by inserting "(1)" after "PENALTIES.—" and by adding the following at the end thereof:

"(2) Any person who violates any requirement of this section, including any requirement of any regulation, order, or certification issued under this section, shall be in violation of this section and shall be liable to the United States for a civil penalty in an amount not to exceed $10,000 for each such violation. The $10,000 amount specified in the preceding sentence shall be adjusted annually for each calendar year after the calendar year 1991 to account for inflation or deflation.

"(3) The Administrator may commence a civil action to enjoin any violation of this section or to assess and recover any civil penalty under paragraph (2). Any action under this paragraph may be brought in the district court of the United States for the district in which the violation is alleged to have occurred or in which the defendant resides or has its principal place of business, and the court shall have jurisdiction to issue injunctive relief and to assess a civil penalty.

"(4) The Administrator may issue an order to any person requiring such person to comply with any requirement of this section and the Administrator may, after notice and opportunity for hearing on the record in accordance with section 554 and 556 of title 5 of the United States Code, issue an order assessing a civil penalty for violation of this section.".

(B) In subsection (a)(1) of section 1449 after "alleged" insert "to have violated or".

(C) The last sentence of subsection (a) of section 1449 is amended by inserting the following before the period at the end ", and to apply any appropriate civil penalties (except for actions under paragraph (2)".

(D) Insert in section 1449 "or a State with primary enforcement responsibility" after "the Administrator" in each place such term appears.

(E) In section 1445(a)(1), strike all of the first sentence before "shall establish" and insert "Every person who is subject to any requirement of this title" and strike "by regulation".

(F) In section 1445(b)(1), strike "any supplier of water" and all that follows down to "is authorized to" and insert "any person who is subject to any requirement of this title or any person who is in charge of any property of such person,".

SEC. 4. INDOOR LEAD CONTAMINATION.

The Public Health Service Act (42 U.S.C. 201 and following) is amended by adding the following new title at the end thereof:

"TITLE XXVIII—INDOOR LEAD CONTAMINATION

TABLE OF CONTENTS

"Subtitle A—Reducing Exposure to Indoor Lead Contamination

"Sec. 2801. Lead inspection and abatement training and licensing.
"Sec. 2802. Lead inspections, lead disclosure statements, and lead abatement.
"Sec. 2803. Disclosure of indoor lead hazards.
"Sec. 2804. Public education program.

"Subtitle B—Schools and Day Care Centers

"Sec. 2821. Lead contamination in schools and day care centers.

"Subtitle C—General Provisions

"Sec. 2831. Definitions.
"Sec. 2832. Authorized state programs.
"Sec. 2833. Enforcement.
"Sec. 2834. Sunshine provisions.
"Sec. 2835. Citizen suits.
"Sec. 2836. Federal facilities.
"Sec. 2837. Indian tribes.
"Sec. 2838. EPA regulations.

"Subtitle A—Reducing Exposure to Indoor Lead Contamination

"SEC. 2801. LEAD INSPECTION AND ABATEMENT TRAINING AND LICENSING.

"(a) ACCREDITATION OF INSTRUCTORS TO TRAIN INSPECTORS AND DELEADERS.—Within 2 years after the enactment of this title, the Secretary shall establish—

"(1) A program to accredit individuals to train lead inspectors to comply with the lead inspection standards under section 2802(b).

"(2) A program to accredit individuals to train deleaders to comply with the lead abatement standards under section 2802(c).

"(b) LICENSING.—Within 2 years after the enactment of this title, the Secretary shall establish a program to license lead inspectors and deleaders. To be licensed as a lead inspector or a deleader an individual shall, at a minimum, meet minimum education or experience requirements, or both, as established by the Secretary, and demonstrate successful completion of a course of training with an instructor accredited under subsection (a)(1) or (a)(2), as the case may be.

"(c) CERTIFICATION OF LABORATORIES.—Within 2 years after the enactment of this title, the Secretary shall establish a program to certify laboratories as qualified to test substances for lead content. To be certified under such program, a laboratory shall, at a minimum, demonstrate an ability to test substances accurately for lead content.

"(d) LISTS OF ACCREDITED INSTRUCTORS, LICENSED INSPECTORS AND DELEADERS AND CERTIFIED LABS.—The Secretary shall prepare and maintain lists (by State or metropolitan area) of licensed lead inspectors, licensed deleaders, accredited instructors and laboratories certified under this section. The Secretary shall distribute such lists to State and local health and environmental agencies and make such lists available to the public.

"(e) ACCREDITATION, CERTIFICATION AND LICENSE FEES.—The Secretary shall impose an annual fee for the accreditation, certification or licensing of any person or laboratory under this section. The fee shall be established at such level as is necessary to cover the costs of administering and enforcing the standards and regulations under this title which are applicable to the persons and laboratories required to be accredited, certified or licensed under this title.

"(f) SUSPENSION OR REVOCATION.—The Secretary may suspend or revoke any accreditation, license or certification issued under this title whenever the Secretary determines that the holder of such accreditation, license, or certification has violated any requirement of this title. Any person whose accreditation, certification or license under this title is denied, suspended, or revoked by the Secretary shall be entitled to an administrative hearing.

"SEC. 2802. LEAD INSPECTIONS, LEAD DISCLOSURE STATEMENTS, AND LEAD ABATEMENT.

"(a) REPORT ON LEAD INSPECTION AND ABATEMENT METHODS AND DEVICES.—Within 1 year after the enactment of this title, the Secretary shall prepare a report on the methods and devices available to inspect for lead paint and lead hazards and to abate lead hazards. The Secretary shall consult with other Federal agencies, State and local governments, labor-management health and safety trust funds, and other interested persons in preparing such report.

"(b) Lead Inspection Standards.—

"(1) In general.—Within 2 years after the enactment of this title, based on the report under subsection (a) and on such other information as may be available to the Secretary, the Secretary shall promulgate standards for the performance of lead inspections of covered premises. Such standards shall include specific criteria for identifying lead hazards. Such standards shall insure that lead inspections performed for compensation are adequate to detect the presence of lead paint and lead hazards. Such standards shall provide for the use of certified laboratories in the case of any lead inspection performed for compensation that relies on the use of a laboratory to detect the presence of lead in samples of substances from a covered premises. The standards under this subsection may also provide for abbreviated inspection procedures in the case of any premises which has been previously inspected in accordance with the standards under this subsection.

"(2) APPROVED METHODS AND DEVICES.—The standards established under this subsection shall prescribe approved inspection methods and devices to screen for and identify lead paint and lead hazards, taking into account reliability, effectiveness, and affordability.

"(3) CONTENTS OF LEAD HAZARD INSPECTION REPORTS.—The standards under this subsection shall include a standard form for lead hazard inspection reports. A lead inspection report shall include a complete description of the lead hazard inspection and, at a minimum, include—

"(A) A description of the location of all lead paint in the interior and exterior of the premises.

"(B) A description of the location of all lead hazards in the interior and exterior of the premises, including a discussion of the nature and severity of each such lead hazard.

"(C) A description and recommendation of site specific available abatement steps.

"(D) A description and recommendation of site specific interim steps which can be taken to minimize exposure to lead hazards, as well as a discussion of activities which should be avoided in order to prevent greater risks of lead exposure.

"(c) Lead Abatement Standards.—Within 2 years after the enactment of this title, based on the report under subsection (a) and such other information as may be available to the Secretary, the Secretary shall promulgate standards for lead abatement in covered premises. The standards shall prescribe approved lead abatement methods and devices to eliminate, reduce, or prevent lead hazards, taking into account reliability, effectiveness, and affordability. Such standards shall establish standards for the conduct of lead abatement work, including standards respecting protection of personal health and safety, hazard awareness, proper cleanup procedures, and such other measures as necessary to protect residents and workers.

"(d) Modification of Standards.—Any person may petition the Secretary to modify the lead inspection standards or the lead abatement standards under this section to include or delete an inspection or abatement method or device. The Secretary shall take final action on such petitions (including modification of the inspection or abatement standards) within 18 months after the date on which the petition was filed.

"(e) Prohibitions.—(1) No person may perform any inspection of a covered premises for compensation to detect lead paint or lead hazards without complying with the standards established under subsection (b).

"(2) No person may perform any lead abatement in a covered premises for compensation without complying with the standards under subsection (c).

"(3) No person may sell or distribute in interstate commerce any device for lead inspection or lead abatement unless such device is approved under the standards under subsection (b) or (c) as the case may be.

"SEC. 2803. DISCLOSURE OF INDOOR LEAD HAZARDS.

"(a) SALE OR LEASE OF COVERED RESIDENTIAL PREMISES.—Within 2 years after the enactment of this title, the Secretary shall promulgate regulations under this title for the disclosure of indoor lead paint and lead hazards. The regulations shall require each person who sells or leases a covered residential premises to arrange for a licensed lead inspector to conduct a lead inspection of the premises and provide the purchaser or lessee with a lead hazard inspection report for the premises before the purchaser or lessee is obligated (under any contract or lease) to purchase or lease the premises. In each case in which such report indicates the presence of lead paint or a lead hazard, the regulation shall require the seller or lessor to provide the purchaser or lessee with a lead disclosure statement. Whenever the seller or lessor has entered into a contract with an agent for the purposes of selling or leasing a covered residential premises, the regulation shall require the agent, on behalf of the seller or lessor, to ensure that such documents are provided to the purchaser or lessee. If the lead inspection indicates no lead paint in the premises, the lead hazard inspection report prepared on the basis of such inspection may be used in all subsequent sales or leases of the premises for purposes of compliance with this subsection.

"(b) RENOVATION OF COVERED PREMISES.—The regulations under this section shall require each person who performs for compensation a renovation of a covered premises to provide a lead disclosure statement to the owner and occupant of such premises prior to commencing the renovation.

"(c) LEAD DISCLOSURE STATEMENT.—Within 2 years after the enactment of this title, after notice and opportunity for comment, the Secretary shall publish, and from time to time revise, a lead disclosure statement to be used in connection with the sale or lease or renovation of covered premises. The statement shall contain information regarding the health risks associated with exposure to lead and shall comply with each of the following:

"(1) The statement shall describe the risks of lead poisoning for children under 6 years of age residing in a premises with lead paint or lead hazards.

"(2) The statement shall describe the risks of renovation in a premises with lead paint or lead hazards.

"(3) The statement shall provide information on approved methods and devices of lead abatement and their effectiveness in reducing, eliminating, or preventing exposure to lead hazards.

"(4) The statement shall advise persons how to obtain a list of licensed deleaders in the area in which the statement is to be used.

"(5) In the case of a statement to be used in connection with a renovation, or during any period of extension under section 2803(d), a sale or lease of a covered premises, the statement shall also provide information on approved methods and devices for lead inspections, and advise persons how to obtain a list of licensed lead inspectors in the area in which the statement is to be used.

"(d) Effective Date.—

"(1) In general.—The regulations under this section shall take effect 3 years after the date of the enactment of this subtitle, except as provided in paragraph (2).

"(2) EXTENSION.—The Secretary may, by rule, extend the effective date of requirements under subsection (a) relating to lead inspections in any State or area if the Secretary determines that a sufficient number of licensed lead inspectors is not available in such State or area as of the otherwise applicable effective date under paragraph (1). Any such extension shall be for the minimum period necessary to insure that a sufficient number of such licensed inspectors will be available but in no event shall such requirements take effect with respect a covered residential premises after the applicable effective date specified in the following table:

"Date of Initial Construction of Covered Residential Premises	Effective Date (after enactment of this title)
Before 1940	4 years after enactment
Before 1960 but after 1939	5 years after enactment
After 1959 but before 1980	6 years after enactment

"(3) INTERIM REQUIREMENTS.—If the Secretary extends the effective date of requirements of subsection (a) relating to lead inspections in any State or area, the Secretary shall, during the period of such extension, require that each person who sells or leases a covered residential premises provide the purchaser or lessee with a lead disclosure statement before the purchaser or lessee is obligated (under any contract or lease) to purchase or lease the premises. Whenever the seller or lessor has entered into a contract with an agent for the purposes of selling or leasing a covered residential premises, the Secretary shall, during the period of such extension, require the agent, on behalf of the seller or lessor, to ensure that the lead disclosure statement is provided to the purchaser or lessee. In any such case, if a lead inspection which complies with this subtitle has been conducted for such premises and such inspection indicates no lead paint in the premises, at the option of the seller or lessor the lead hazard inspection report prepared on the basis of such inspection may be used in lieu of the lead disclosure statement.

"SEC. 2804. PUBLIC EDUCATION PROGRAM.

"The Secretary shall undertake a public education program to inform the public about the risks of lead poisoning and the requirements established pursuant to this title. The campaign shall be directed at pediatricians, teachers, day care providers, parents, real estate agents, landlords, and home renovation and remodeling contractors and workers, as well as the general public.

"Subtitle B—Schools and Day Care Centers

"SEC. 2821. LEAD CONTAMINATION IN SCHOOLS AND DAY CARE CENTERS.

"(a) INSPECTION.—Not later than 2 years after the date of enactment of this title, the Secretary shall promulgate a rule requiring each local education agency to conduct, within 4 years after such date of enactment, a lead inspection for each covered school or day care center owned or operated by that agency. The inspection shall be carried out by a licensed lead inspector. In each case in which such inspection indicates the presence of lead paint or a lead hazard in a school or day care center, the local education agency shall, within 90 days after receiving the lead hazard inspection report, provide all teachers and other school or day care center personnel and parents (or guardians) of all children attending the school or day care center concerned with a copy of the lead hazard inspection report and a lead disclosure statement, together with a description of actions to be undertaken in response to the report. The lead disclosure statement shall comply with section 2803, with such modifications as the Secretary deems necessary. The local education agency shall also provide the lead hazard inspection report, the lead disclosure statement, and a description of abatement actions undertaken or to be undertaken, to newly hired teachers and other personnel and parents (or guardians) of newly enrolled children for so long as lead paint or a lead hazard continues to be present in the school or day care center.

"(b) FEDERAL ASSISTANCE.—The Secretary shall make grants to States to assist local education agencies in testing for, and abating, lead paint and lead hazards in covered schools and day care centers. The grants may only be used by the States to reimburse local education agencies for expenses incurred after the enactment of this title for lead inspection and abatement, except that not more than 5 percent of the amounts available under this subsection may be retained by the States to be used for administrative expenses incurred by the State. Such reimbursement shall be provided to such schools and day care centers based on financial need and the severity of the lead hazard involved. There are authorized to be appropriated for each of the 5 consecutive fiscal years commencing with fiscal year 1992, $30,000,000 to carry out this section.

"Subtitle C—General Provisions

"SEC. 2831. DEFINITIONS.

"(a) STATUTORY DEFINITIONS.—As used in this title—

"(1) The term 'Secretary' means the Secretary of Health and Human Services.

"(2) The term 'lead hazard' means either lead paint that is peeling, flaking, or chipping or lead dust in excess of the recommended clearance criteria for dust lead in the 'Interim Guidelines for Hazard Identification and Abatement for Public and Indian Housing' of the Department of Housing and Urban Development, as in effect on the date of enactment of this title (floors: 200 ug/sq ft; window sills: 500 ug/sq ft.; window wells: 800 ug/sq ft.).

"(3) The term 'lead hazard inspection report' means a report prepared by a licensed lead inspector concerning lead paint and lead hazards which meets the requirements of section 2802.

"(4) The term 'lead disclosure statement' means a disclosure statement which meets the requirements of 2803.

"(5) The term 'indoor lead contamination control program' means all standards, regulations and other requirements established by the Secretary under this title.

"(6) The term 'covered premises' means a covered residential premises and a covered school or day care center.

"(7) The term 'covered residential premises' means the interior and exterior of any building constructed before 1980 which is used for single or multifamily residential purposes.

"(8) The terms 'covered school and day care center' means the interior and exterior of any building constructed before 1980 which is used as an elementary school as defined in section 198 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 2854) or as a kindergarten, or day care facility, which regularly provides day care services or education, or both, for children under 6 years of age.

"(9) The term 'lead paint' means any paint or surface coating that contains lead in excess of the abatement threshold described in 'Interim Guidelines for Hazard Identification and Abatement for Public and Indian Housing' of the Department of Housing and Urban Development, as in effect on the date of enactment of this title (1.0 mg/cm2 or 0.5% by weight).

"(10) The terms 'lead abatement' and 'abatement' means any action to prevent, reduce, or eliminate lead paint and lead hazards, including but not limited to the removal or encapsulation of lead paint.

"(11) The term 'person' includes, in addition to individuals, corporations, partnerships, and other entities, all governmental entities, including Federal, State, and local departments, agencies, and instrumentalities.

"(12) The term 'renovation' means a renovation or remodeling of a covered premises or any other repair, reconstruction, or paint removal activity with respect to a covered premises which may create a lead hazard in the premises.

"(13) The term 'State' includes, in addition to the several States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the Virgin Islands, and American Samoa.

"(14) The term 'licensed deleaders' means any person licensed under this title to perform lead abatement work and the term 'licensed lead inspector' means any person licensed under this title to inspect for lead paint and lead hazards.

"(15) The term 'lead inspection' means the inspection of a covered premises to detect the presence of any lead paint or lead hazard.

"(16) The term 'local education agency' means a local education agency (as defined in section 1461(3)) which owns or operates a covered school or day care center.

"(b) MODIFICATION OF STATUTORY DEFINITIONS.—The Secretary may, by rule, modify any definition set forth in subsection (a) if such modified definition will result in more protection for human health than the definition set forth in subsection (a).

"SEC. 2832. AUTHORIZED STATE PROGRAMS.

"(a) AUTHORIZATION OF STATE PROGRAM.—Any State which seeks to administer and enforce all or any part of the indoor lead contamination control program may, after notice and opportunity for public hearing, develop and submit to the Secretary an application, in such form as he shall require, for authorization of such program. Within 180 days following submission of an application under this subsection, the Secretary shall approve or disapprove the application. The Secretary may approve the application only if, after notice and after opportunity for public hearing, the Secretary finds that—

"(1) such State program is at least as protective of human health and welfare as the Federal program under this title,

"(2) such program provides adequate enforcement. Any action taken by a State under a program authorized under this section shall have the same force and effect as action taken by the Secretary under this title.

"(b) WITHDRAWAL OF AUTHORIZATION.—If a State is not administering and enforcing a program authorized under this section in compliance with this title, the Administrator shall so notify the State and, if corrective action is not completed within a reasonable time, not to exceed 180 days, the Secretary shall withdraw authorization of such program and establish a Federal indoor lead contamination control program pursuant to this title.

"(c) MODEL STATE PROGRAM.—Within 2 years after the enactment of this title, the Secretary shall promulgate a model State program which may be adopted by any State which seeks to administer and enforce a State program under this section.

"(d) OTHER STATE REQUIREMENTS.—A State or local government may adopt or enforce any requirement relating to lead paint and lead hazards which is not inconsistent with this title. No requirement established by a State or local government relating to lead paint and lead hazards which is more protective of human health than any requirement of this title shall be considered inconsistent with this title.

"SEC. 2833. ENFORCEMENT.

"(a) CIVIL PENALTIES.—Any person who violates any requirement of this title, including any requirement of any regulation, order, accreditation, certification or license issued under this title, or under any State program authorized under this title, shall be in violation of this title and shall be liable to the United States for a civil penalty in an amount not to exceed $10,000 for each such violation. The $10,000 amount specified in the preceding sentence shall be adjusted annually for each calendar year after the calendar year 1991 to account for inflation or deflation.

"(b) CIVIL ACTIONS.—The Secretary may commence a civil action to enjoin any violation of this title or to assess and recover any civil penalty under subsection (a) of this section. Any action under this subsection may be brought in the district court of the United States for the district in which the violation is alleged to have occurred or in which the defendant resides or has its principal place of business, and the court shall have jurisdiction to issue injunctive relief and to assess a civil penalty.

"(c) ADMINISTRATIVE ORDERS.—The Secretary may issue an order to any person requiring such person to comply with any requirement of this title and the Secretary may, after notice and opportunity for hearing on the record in accordance with section 554 and 556 of title 5 of the United States Code, issue an order assessing a civil penalty for violation of this title.

"(d) USE OF PENALTIES.—The court or the Secretary in assessing a civil penalty against a local education agency under this subsection shall have jurisdiction to order that all such civil penalties collected be used to pay the costs of testing for lead paid and lead hazards and abating lead hazards in covered schools and day care centers owned or operated by such local education agency.

"SEC. 2834. SUNSHINE PROVISIONS.

"The drafts of proposed and final rules and other actions under this title submitted by the Secretary to any officer or employee of the United States for any interagency review process prior to proposal or issuance of any such rule or other action, all documents accompanying such drafts, all communications submitted to any officer or employee of the United States regarding such rule or action by any person, all comments or communications on such rule or action by any officer or employee of the United States, and all responses to such comments by the Secretary shall be included in the administrative record of such rule or other action. In the case of a proposed rule or proposed action, such documents shall be included no later than the date of proposal. In the case of a final rule or action, such documents shall be included no later than the date of issuance of such final rule or action.

"SEC. 2835. CITIZEN SUITS.

"Any person may commence a civil action on such person's own behalf—

"(1) against any person (including (A) the United States, and (B) any other governmental instrumentality or agency to the extent permitted by the Eleventh Amendment to the Constitution) who is alleged to have violated or to be in violation of any requirement in effect under this title, including any requirement of an authorized State program, or

"(2) against the Secretary (or against any State authorized under section 2832) where there is alleged a failure of the Secretary or State to perform any act or duty under this Act which is not discretionary with the Secretary or State.

The district courts shall have jurisdiction, without regard to the amount in controversy or the citizenship of the parties, to enforce such a requirement or to order the Secretary or State to perform such act or duty, as the case may be, and to apply any appropriate civil penalties (in the case of actions under paragraph (1)). The court, in issuing any final order in any action brought pursuant to this subsection, may award costs of litigation (including reasonable attorney and expert witness fees) to any prevailing plaintiff, whenever the court determines such award is appropriate.

"SEC. 2836. CONTROL OF LEAD HAZARDS AT FEDERAL FACILITIES.

"Each department, agency, and instrumentality of executive, legislative, and judicial branches of the Federal Government (1) having jurisdiction over any property or facility, or (2) engaged in any activity resulting, or which may result, in a lead hazard, and each officer, agent, or employee thereof, shall be subject to, and comply with, all Federal, State, interstate, and local requirements, administrative authority, and process and sanctions respecting lead paint and lead hazards in the same manner, and to the same extent as any nongovernmental entity. The preceding sentence shall apply (A) to any requirement whether substantive or procedural (including any recordkeeping or reporting requirement, any requirement respecting certification or licensing, and any other requirement whatsoever), (B) to any requirement to pay a fee or charge imposed by any State or local agency to defray the costs of its lead hazard program, (C) to the exercise of any Federal, State, or local administrative authority, and (D) to any process and sanction, whether enforced in Federal, State, or local courts, or in any other manner. This subsection shall apply notwithstanding any immunity of such agencies, officers, agents, or employees under any law or rule of law. No officer, agent, or employee of the United States shall be personally liable for any civil penalty for which he is not otherwise liable.

"SEC. 2837. INDIAN TRIBES.

"The Secretary may promulgate rules under this title under which any Indian tribe may be treated as a State for purposes of this title.

"SEC. 2838. HHS REGULATIONS.

"The regulations of the Secretary under this title shall include such monitoring, record keeping, reporting, and labeling requirements as may be necessary to insure the effective implementation of this title. The regulations may be amended from time to time as necessary.".

SEC. 5. LEAD CONTAMINATION IN FOOD.

The Federal Food, Drug, and Cosmetic Act is amended as follows:

(1) At the end of section 402 (21 U.S.C. 342) add the following:

"(f) Effective 12 months after the date of the enactment of this paragraph, if it is packaged in a can or other container that contains solder or flux with any lead content.

"(g) Effective 24 months after the date of the enactment of this paragraph, if it bears or contains any lead, unless the Secretary has determined, by regulation, that the level of lead borne or contained by the food is safe within the meaning of section 409.".

(2)(A) Chapter IV (21 U.S.C. 341 et seq.) is amended by adding at the end the following:

"LEAD REGULATIONS FOR WARES

"SEC. 413. Not later than 12 months after the date of the enactment of the Lead Contamination Control Act Amendments of 1991, the Secretary shall promulgate regulations to establish such standards and testing and certification procedures with respect to lead in ceramic ware and crystal ware as is necessary to make food that contacts such ware safe within the meaning of section 409.".

(B) Section 301 (21 U.S.C. 331) is amended by adding at the end the following:

"(u) Effective 24 months after the enactment of this subsection, the introduction or delivery for introduction into interstate commerce of any ceramic ware or crystal ware that has not been certified by the Secretary as in compliance with regulations under section 413.".

O

Mr. WAXMAN. Our first witness today is Dr. Vernon N. Houk, Director of the Center for Environmental Health and Injury Control at the Centers for Disease Control.

Dr. Houk, we want to welcome you to the subcommittee meeting this morning. Your prepared statement will be inserted in the record in its entirety. We'd like to ask, if you would, to try to keep the oral presentation to around 5 minutes.

STATEMENT OF VERNON N. HOUK, ASSISTANT SURGEON GENERAL, DIRECTOR, NATIONAL CENTER FOR ENVIRONMENTAL HEALTH AND INJURY CONTROL, CENTERS FOR DISEASE CONTROL

Mr. HOUK. Thank you, Mr. Chairman.

I'm Vernon Houk from the Centers for Disease Control. I'm again pleased to testify on behalf of the Department on the subject of lead poisoning.

The Department strongly supports efforts to prevent lead poisoning which remains the most common and societally devastating environmental disease of young children.

Studies on the health effects of lead over the past decade uncover a consistent trend: the more that is learned about lead's effects on the child and the fetus, the lower the blood lead level at which adverse effects can be documented. Because of the recent scientific information on adverse effects of low lead level exposure in children, we are developing the new guidelines from CDC.

Over the last 20 years, we as a society have made substantial progress in reducing lead exposure in the population. Nevertheless, we estimate in 1984 at least 250,000 children in the United States, or 1.5 percent of all children under the age of 6, had blood lead levels above 25 micrograms per deciliter and 3 to 4 million children, or 17 percent of all children under age 6, had blood lead levels above 15.

The large number of children with blood lead levels in the toxic range shows that existing environmental lead levels in the United States provide no margin of safety for the protection of children.

Childhood lead poisoning is entirely preventable. We continue to believe that a concerted, societywide effort could eliminate this disease in the United States in the next 20 years as a public health problem.

As you know, in February, the Secretary released the Strategic Plan and detailed the first 5 years of this effort.

The first element of the plan is increased childhood lead poisoning prevention activities. This includes screening children for lead poisoning, ensuring appropriate medical and environmental followup for poisoned children, and education and outreach about childhood lead poisoning and its prevention.

The secondary prevention activities will continue to be essential while over time we worked hard achieving primary prevention of this disease.

The Department strongly supports the reauthorization of the lead poisoning program as included in section 2 of H.R. 2840.

As I have testified many times, cost-effective and safe lead-based paint abatement is essential for the elimination of lead poisoning.

This is the second critical element in the Strategic Plan. Lead-based paint is the most concentrated source of lead to children and, historically, is the source most closely linked to overt lead poisoning in children.

H.R. 2840 addresses effective and safe lead-based paint abatement by calling for training and licensing of lead inspectors and deleaders and certification of laboratories measuring the lead content of environmental samples. These topics were discussed in the chapter on Infrastructure Development in the Strategic Plan. It is not apparent that Federal Government certification and licensing is necessary, however, at this time.

H.R. 2840 also calls for regulations to require the testing for lead-based paint, and disclosure of these results at certain transactional events involving residential property. Although real estate testing and disclosure is discussed in the Strategic Plan, the administration sees no reason for the Federal Government to legislate or regulate these informational transactions.

The third critical element of the Plan focuses on other widespread sources and pathways of lead exposure to children. In the past, we have all thought about each source of lead individually. We failed to consider that once lead gets into the child, it doesn't matter what the source is; all sources add up and contribute to the overall levels of lead in the population.

It is important to recognize that high-dose exposure may result from other sources, such as food, ceramicware, et cetera.

We have a landmark opportunity to make a major impact on the lives of the children of this country. This is one of the few times where we have enough knowledge and ability to eliminate one of the major diseases of children. No entity can solve this problem alone.

However, through a continued coordination at the Federal level, and work with State and local governments, the private sector, and individual citizens we can have an impact on the future of millions of our children, and, indeed, the future of our society.

Our children, the most important resource for the future, deserve nothing less. We at HHS are committed to doing our part.

While the administration endorses the goal of reducing lead exposures, the administration cannot support the bill itself. We, along with EPA, OSHA and HUD are moving together to reduce unacceptable levels of lead exposures in the environment using existing authorities.

This concludes my testimony, Mr. Chairman. I'll be happy to answer any questions.

[The prepared statement of Mr. Houk follows:]

PREPARED STATEMENT OF VERNON N. HOUK, ASSISTANT SURGEON GENERAL, DIRECTOR, NATIONAL CENTER FOR ENVIRONMENTAL HEALTH AND INJURY CONTROL, CENTERS FOR DISEASE CONTROL

Good morning, Mr. Chairman. I am Dr. Vernon N. Houk of the Centers for Disease Control [CDC]. I am pleased to testify before this Subcommittee on behalf of the Department on the subject of lead poisoning prevention. You have asked for our views on the causes and extent of childhood lead poisoning and actions needed to address the problem. In particular, you have requested our views on the relationship of the HHS "Strategic Plan for the Elimination of Childhood Lead Poisoning" and H.R. 2340, the Lead Contamination Control Act Amendments of 1991.

CDC participates in a Federal Lead Taskforce. This group provides a mechanism for coordination and communication among federal agencies involved in lead paint issues. This task force, cochaired by EPA and HUD, also includes participation from OSHA, the National Institute for Occupational Safety and Health [NIOSH] of the CDC, CPSC, NIST, the Agency for Toxic Substances and Disease Registry [ATSDR], the National Institute for Environmental Health Sciences [NIEHS], and others. As one of the joint efforts of the taskforce, a federal lead hotline/clearinghouse is being developed.

The Department strongly supports efforts to prevent lead poisoning, which remains the most common and societally devastating environmental disease of young children. The tragic consequences of this environmental disease on our children are all the more deplorable when one recognizes that they are preventable.

The risks of lead exposure are not based on theoretical calculations. They are well known from studies of children themselves and are not extrapolated from data on laboratory animals or high-dose occupational exposures. Lead is a poison that affects virtually every system in the body. It has been linked to kidney disease and hypertension in adults and is particularly harmful to the developing brain and nervous system; therefore, lead exposure is especially devastating to children and fetuses because it can cause neurobehavioral problems, learning disabilities, and deficits in IQ.

Studies on the health effects of lead over the past twenty years uncover a consistent trend: the more that is learned about lead's effects on the child and the fetus, the lower the blood lead level at which adverse effects can be documented. Because of the recent scientific information on adverse effects of low level lead exposure in children, the CDC guidelines on childhood lead poisoning prevention are currently being revised. We understand that there are many issues surrounding revising the CDC lead guidelines, including working out implementation with public health officials, health care providers, and others. We are working through these issues carefully, including discussing them with our colleagues such as the Association of State and Territorial Health Officials, the National Association of County Health Officials, and the U.S. Conference of Local Health Officers.

Over the last twenty years, we as a society have made substantial progress in reducing lead exposure in the population. The decline in blood lead levels has been in part aided by government and private steps to reduce lead exposure, such as the removal of lead from gasoline, from paint manufactured for interior residential use, and from food. Average blood lead levels decreased 37 percent between 1976 and 1980, primarily due to the phaseout of lead in gasoline. Nevertheless, based on extrapolations from data collected in 1976–1980, in 1984 at least 250,000 children in the United States (1.5 percent of all children under age 6 years) had blood lead levels above 25 μg/dl, and 3 to 4 million children (17 percent of all children) had blood lead levels above 15 μg/dl. The large number of children with blood lead levels in the toxic range shows that existing environmental lead levels in the United States provide no margin of safety for the protection of children.

Childhood lead poisoning is entirely preventable. We believe that a concerted, societywide effort could eliminate this disease in the U.S. in the next 20 years.

On February 21, 1991, the Secretary of Health and Human Services released a Strategic Plan for the Elimination of Childhood Lead Poisoning, outlining the first 5 years of this effort. Like the new CDC guidelines on preventing childhood lead poisoning, the Strategic Plan recognizes the need for primary prevention of this disease. It describes actions that can be taken by all levels of government and the private sector. The overall benefits to society of preventing childhood lead poisoning are incontrovertible.

The Strategic Plan includes both a program and a research agenda. The program agenda, which will target efforts first to children with the highest blood lead levels greater than 25 μg/dl, calls for the following: Expanded childhood lead poisoning prevention programs and activities; cost-effective and safe abatement of lead-based paint in housing; reduction in sources of lead exposure in addition to lead-based paint; and national surveillance for elevated blood lead levels.

The first element of the Strategic Plan is increased childhood lead poisoning prevention activities. This includes screening children for lead poisoning, ensuring appropriate followup for poisoned children, and education and outreach about childhood lead poisoning and its prevention. These secondary prevention activities will continue to be essential while, over time, we work towards achieving primary prevention of this disease. The CDC grant program focuses on these activities. The Department strongly supports the reauthorization of the lead poisoning prevention program administered by the Centers for Disease Control, as included in H.R. 2840.

As I have testified many times, cost-effective and safe lead-based paint abatement is essential for the elimination of childhood lead poisoning, and this is the second critical element of the Strategic Plan. Lead-based paint is the most concentrated source of lead to children and, historically, is the source most closely linked to overt lead poisoning in children. For children with the highest blood lead levels, that is, children with overt lead poisoning, lead-based paint is of particular importance because of both the contribution of lead paint ingestion and the ingestion of soil and dust contaminated by leaded paint. Recognizing that we are dealing with finite resources, it is these children who will receive the highest priority.

You have asked me to discuss the relationship between the Strategic Plan and H.R. 2840. H.R. 2840 addresses effective and safe lead-based paint abatement by calling for training and licensing of lead inspectors and deleaders and certification of laboratories measuring the lead content of environmental samples. These topics were generally discussed in the chapter on infrastructure development in the Strategic Plan. It is not apparent that federal government certification and licensing is necessary at this time. H.R. 2840 also calls for regulations to require testing for lead-based paint, and disclosure of these results at certain transactional events involving residential property. Although real estate testing and disclosure was mentioned in the Strategic Plan, the Administration sees no reason for the federal government to legislate or regulate these informational transactions.

The Committee should realize, however, that EPA is already actively pursuing the development and dissemination of training materials for lead inspection and control personnel. Additionally, EPA has taken the lead in stimulating efforts to assure that lead-based paint professionals are certified.

There is clearly a need for state and private sector involvement. In particular, issues such as the accreditation of environmental testing laboratories may be best handled by the private sector.

The third critical element of the Strategic Plan focuses on other widespread sources and pathways of lead exposure to children. In the past, we tended to think about each source of lead individually. We failed to consider that once the lead gets into the child, it doesn't matter what the source was; all sources of lead add up. Lead in water, food, soil, and air, in particular, may affect large numbers of children and contribute to overall levels of lead in the population. Continued efforts to reduce these sources and pathways of lead exposure will result in lower average blood lead levels in the United States and will thereby further diminish the likelihood of lead poisoning developing even in children exposed to a high dose source.

It is also important to recognize that high-dose exposure may occasionally result from sources other than lead-based paint in specific situations. We recently investigated the source of exposure for a family in which 3 of the 4 children became lead poisoned, with one child developing a blood lead level close to 100 μg/dl. After a comprehensive evaluation, we discovered that the source of lead was foreign-made pottery that had been used to mix punch for a party. We subsequently measured blood lead levels in other people who attended the party. Almost two months after the party occurred we could still show higher blood lead levels in people who had drunk the punch.

The fourth element of the Strategic Plan is the call for national surveillance for blood lead levels. Such surveillance, in conjunction with data from screening programs, is essential for defining those areas in greatest need of intensive interventions and for evaluating our progress in eliminating this disease. This is especially important because current estimates of blood lead levels are based on outdated data gathered between 1976 and 1980—data that cannot be used to evaluate geographic units as small as cities or communities.

We have a landmark opportunity to make a major impact on the lives of the children of this country. This is one of the few times where we have enough knowledge and ability to eliminate one of the major diseases of children. The Federal Government or any single Federal agency cannot solve this problem alone. No state government or single agency within a state can solve this problem alone. The private sector cannot solve this problem alone. Individual citizens cannot solve this problem alone. However, through continued coordination at the Federal level, and work with state and local governments, the private sector, and individual citizens we can have an impact on the future of millions of children, and, indeed, the future of our society. Our children, the most important resource for the future, deserve nothing less. We at HHS are committed to doing our part.

While the Administration endorses the goal of reducing lead exposures, the Administration cannot support the bill itself. We, along with EPA, OSHA and HUD are moving forward together to reduce unacceptable lead exposures in the environment using existing statutory authority. CDC and these other agencies have developed coordinated strategies to address the highest risks relating to lead exposure. These strategies include reevaluating the blood lead levels of concern by CDC; testing for lead-based paint in Public and Indian housing by HUD; minimizing human and environmental exposure through traditional control mechanisms and implementing lead pollution prevention programs by EPA; participating in the coordination of federal activities in lead-based paint by CDC, EPA, HUD, OSHA, CPSC, NIST, ATSDR, NIEHS and others. We do not need additional statutory authority at present.

This concludes my testimony. I am happy to answer any questions.

Mr. WAXMAN. Thank you very much, Dr. Houk. I appreciate your appearing before this subcommittee to testify on lead poisoning. You've testified in the past on this subject and given us very startling testimony about the pervasiveness of lead poisoning.

Oftentimes we hear about people being exposed to carcinogens from a number of different sources and we try to develop strategies to minimize the impact of carcinogens. But carcinogens really have an impact maybe 10 or 15 years down the road in a cumulative way, and in some people will cause cancer.

With lead exposure, we're talking about almost a certainty for the children impacted of mental impairment.

Isn't that the case?

Mr. HOUK. I believe so, yes.

Mr. WAXMAN. So we're talking about actual poisoning, not just a potential impact against the health of the people involved.

You've been a very forceful advocate of increased attention to childhood lead poisoning. You've called childhood lead poisoning the most common and societally devastating disease of young children.

You put together an outstanding Strategic Plan to combat lead poisoning, and I have a copy here. This is the report that you put out. It's only 4 months old, because it's dated February 1991. I don't doubt your personal convictions about the importance of doing something about lead poisoning, but it has been apparent to me that the administration has sent you down here to testify and to make a U-turn on childhood lead poisoning.

When Congressman Sikorski and I put together H.R. 2840 we paid very close attention to this strategy, which the Centers for Disease Control submitted 4 months ago, and we modeled our legislation on the recommendations in this report.

But today you've been sent by the administration to disavow the positions that you took in this very report.

What I want to do is go through some of those recommendations in the Strategic Plan and compare them first to H.R. 2840, which is our bill, and then to see where the administration stands on these positions now.

Let's begin with the program to license lead inspectors and abatement workers. This is an important program. The Alliance to End Childhood Lead Poisoning calls it the single most immediate obstacle to progress. We need to license inspectors and workers so that families with lead problems in their homes can turn to qualified people to eliminate the risks.

In Los Angeles, the district I represent and where I come from, it's impossible to find qualified deleaders. In fact, one family told us they had to fly a contractor out from Massachusetts to remove old lead paint from their home.

In your Strategic Plan in February, you recognized the importance of licensing. On page 30, you wrote, "Mandatory requirements for the certification of contractors and their workers, testers, and inspectors should be established."

We took that recommendation to heart. In the bill we have a provision for inspectors and abatement workers. Yet, as I understand the written testimony you have submitted to us, the administration now opposes licensing.

Your testimony today is, "It is not apparent that Federal Government certification and licensing is necessary."

How do you justify this 180 degree change in position?

Mr. HOUK. The Strategic Plan, Mr. Waxman, was put together by a whole group of people. As we testified before, we included the elements that we thought were necessary to accomplish the goal of preventing childhood lead poisoning.

We specifically stated throughout the Plan, and as I believe I testified last time before your subcommittee, that these were not all roles for the Federal Government. There were State roles; there were private sector roles; and all these are not spelled out explicitly in the plan. As we develop the implementation plan, they would be.

My prepared text and what I read today said that the administration did not believe that there was a necessity for the Federal Government to be involved in the licensure of these activities.

Mr. WAXMAN. Let's look at this question. Your plan said that it's important for people who are competent to do the inspection and work on taking lead out of homes. We need the competent, qualified people. And then we set standards for what that competency might be. That can be done at the State level. It could be done at the Federal level. The bill provides that it will be done at the Federal level unless the States adopt their own legislation and then the State law would prevail.

What's wrong with that?

Mr. HOUK. It is essential that we have people who are competent to safely remove lead paint, both for the protection of themselves and their families and the people living in the house.

Who regulates that competency is, I think, the matter of some question. I noted in your bill that there were also provisions that the States could apply to do this. It is my personal view from being around this field for 10 years, that the closer regulation is to where the action is, the more effective it would be.

Mr. WAXMAN. I agree with that position. But if the States don't act, don't we have a responsibility when we recognize this terrible threat to children's health to make sure that it's being done and to push the States to do it?

Don't we have a responsibility to take this Strategic Plan that you've recommended to us and make sure that it's followed and not just hope somebody else does the job?

Mr. HOUK. Someone does, sir, and I would hope also that the parents and the citizens in the community would have a responsibility to ensure that this is done appropriately in their community.

Mr. WAXMAN. I fear it won't get done if we don't insist upon it.

Let's look at another provision. H.R. 2840 contains a requirement that HHS sets standards for products used in lead abatement, and now the administration is opposing this requirement.

Why is the administration now opposing this requirement when the Strategic Plan, which you developed, said that during the past few years, private firms had developed a variety of new products to reduce the costs of lead-based paint abatement standards and performance criteria must be established to assume the effectiveness of the new products. That's what the reports says.

Now the administration's saying, we shouldn't have that in law. Why not?

Mr. HOUK. I believe that it is important to have products that can do this safely and cost effectively. Whose responsibility it is to develop those has not been set in the Strategic Plan.

Mr. WAXMAN. If it's not our responsibility at the Federal Government, it sounds like we're just hoping somebody else will do the job, and I'm afraid that nobody's going to do the job, and nobody has done the job up till now; and that we're going to have continued poisoning of our children.

Let's turn now to the standards for laboratories that test lead paint samples. In the Strategic Plan you state, "Within the next 18 to 24 months, some laboratory accreditation program is clearly needed to assure that consistent and reliable laboratory results are obtained." That's what you said in the Strategic Plan.

We took that provision and put it in our bill. We required HHS to develop a program to certify laboratories within 24 months, the outer limit recommended by the Strategic Plan.

Yet, now the administration is opposing this provision.

How do you justify that?

Mr. HOUK. We have a program which I mentioned to you before in my last testimony, in which over 400 labs can now measure lead in blood accurately, down to the levels that we're talking about.

We do not have a program for the environmental measurement at this point that I'm aware of. I believe this is essential if we're going to accomplish our goal of reducing childhood lead poisoning. Again, that's the issue of who does it.

If one looks at the regulations that were associated with the Lead Poisoning Act that began in 1972, for any community that received grant funds from us, part of the requirements were that that community had to develop abatement strategies. There was no licensing requirement, but safe and effective abatement and laboratory standards for doing this were included.

Mr. WAXMAN. Dr. Houk, it's very plain to me what's going on here. The administration released the Strategic Plan with a great deal of fanfare in February. It had good press. We're trying to do something, they claimed, about the most serious problem facing children. But it's clear they have absolutely no intention of ever executing this plan. Somebody else may follow these guidelines. Some other Agency of government may do something. Maybe the private sector will get it done. Maybe it won't get done. And maybe we'll be sitting here another year from now and a year after that, talking about how the education President, with all of his initiatives, couldn't educate children whose minds were impaired by lead poisoning and never even had a fair chance in the beginning of life to advance and to improve and to achieve what otherwise that individual might have achieved had we prevented this poisoning and this impairment.

I regret the administration's turned its back on its own Centers for Disease Control and refused to move forward with legislation to accomplish something that must be accomplished, and that no one should be able to disagree with.

Mr. Hastert?

Mr. Hastert. Thank you, Mr. Chairman, I certainly appreciate the ability to be here today and to ask some questions. And I also appreciate us taking our typical nonpartisan approach to this problem.

I have been concerned, when I read in the newspaper, about lead on Capitol Hill here. I thought that maybe some of the people who had been around here a long time had been drinking that water thought a little funny, but now I know why.

Dr. Houk, who removes this lead?

Mr. Houk. The lead is removed generally by contractors.

Mr. Hastert. Basically in the private sector, right?

Mr. Houk. The private sector.

Mr. Hastert. Do States put out any regulation the standards that these people have to meet?

Mr. Houk. Most States have no regulations that I know of, with the exception of the State of Massachusetts, I believe that's true. There may be some local city regulations that are left over from the old lead prevention program that was funded in the 1970's.

Mr. Hastert. Is it material that is removed from these domiciles and apartment buildings classed as a hazardous material?

Mr. Houk. Not generally. I testified several times before that not only is safe and effective abatement essential, but the safe and effective disposal of the debris that is removed is also essential.

Mr. Hastert. Is that a problem today as you see it?

Mr. Houk. I believe it is, sir.

Mr. Hastert. What kind of products—you just scrape this stuff from the wall? When I was involved in the State of Illinois when we had asbestos abatement, there were a lot of procedures set, and standards set, and licensing put in place, and ways of disposing of that material.

How do you remove this stuff? Do you scrape it? Do you dissolve it, what happens?

Mr. Houk. Some of the lead paint on the inside and the outside of the homes in this country contains as much as 50 percent lead, and some of it a little bit more.

Mr. Hastert. Fifty percent?

Mr. Houk. Fifty percent.

Mr. Hastert. That's a lot of lead.

Mr. Houk. I think high grade ore is about 3 or 4 percent. The lead is removed either with a heat gun, which is not very safe——

Mr. Hastert. They burn it off?

Mr. Houk [continuing]. Heating it down, scraping if off, sanding it—which is not very safe—removing some of the boards and disposing of the doors, the windows; or putting up a barrier by covering it up with some other wall material.

Mr. **Hastert**. You can scrape it off, you can burn it off, you can sand it off, you can encapsulate it.

Mr. **Houk**. And except for encapsulation, none of those are very safe and there is a need very careful worker protection and protection for the families in the homes.

Mr. **Hastert**. Any idea of the cost of lead abatement?

Mr. **Houk**. I believe the average cost that the Department of Housing and Urban Development is using now is somewhere between $8,000 and $10,000 per residence. There are some abatement techniques that are significantly less than that, and it depends upon how much and where the lead is in the house.

In certain cities in the country, the tradition has been only to paint the doorstops and the sills and use a lot of wallpaper. In other cities that approach is not used, and lead is more pervasive.

Mr. **Hastert**. So in your opinion, then we need to make sure that there's some system in place that the processes of lead removal are somewhat standardized and safe; is that correct?

Mr. **Houk**. Yes.

Mr. **Hastert**. And that the disposal of the remnants of the product or the remnants that of the removal, then are safe and acceptable?

Mr. **Houk**. Yes.

Mr. **Hastert**. Do you think that, in your opinion, States, localities, who should be responsible for that?

Mr. **Houk**. It is my view that these activities are more effective the closer they are to where the action is, either at the local level or the State level. But whoever is responsible for them, they need to be done.

Mr. **Hastert**. Mr. Houk, H.R. 2840, would give the Department of Health and Human Services almost exclusive authority to set up a program for lead paint abatement.

You mentioned in your testimony that the work of the Federal Lead Task Force, which includes EPA, HUD, and other organizations, which approach do you think is more likely to be effective?

Mr. **Houk**. The provisions in section 4 of the act, are not what HHS normally does. I think it's going to have to be a cooperative effort through all sectors, all parts of the Federal Government, the private sector, the States, and the local governments.

The problem of lead poisoning in children and the problem of abatement is big enough that there's enough work for all of us to do for many years.

Mr. **Hastert**. Dr. Houk, how would HHS enforce the lead inspection requirement in H.R. 2840?

Mr. **Houk**. I do not know yet.

Mr. **Hastert**. Would the rules and regulations be passed on to the States to enforce?

Mr. **Houk**. If the legislation were passed and signed into law and this became our responsibility, we would get a group of people, including the Office of the General Counsel and everybody else, and discuss the best way to implement this.

Mr. **Hastert**. So then we would have the Federal Government enforcing upon the States mandates and procedures to do this.

Is there funding in this bill to do that, or authorization for funding to do that?

Mr. HOUK. I don't know, sir. In my copy of it, I did not see it.

Mr. HASTERT. Very good.

Thank you, Mr. Chairman.

Mr. WAXMAN. Thank you, Mr. Hastert.

Mr. Sikorski.

Mr. SIKORSKI. Thank you, Mr. Chairman.

Dr. Houk, I want to discuss the inspection and disclosure requirements of H.R. 2840 with you. As you know, the bill requires that homes be inspected for dangerous levels of lead paint before sale or rental; then requires results be disclosed before a new family moves in—renter or buyer.

The program ensures that families know the dangers of lead poisoning, thereby giving them a chance to defend themselves and their children. The idea is like a termite inspection, except much more important since the health of children is at stake and the threat here is invisible, odorless, tasteless, and the target of this threat is the minds and bodies of our kids.

The Strategic Plan that you came up with endorsed the idea of inspection and disclosure. On page 27, in fact, it's listed as one of the four main strategies.

However, the administration testimony that you have to present, you've been directed to oppose inspection and disclosure.

How can this reversal on an issue of prime strategic importance be justified?

Mr. HOUK. I believe the testimony says it is not apparent that this is a Federal role. These provisions are included in a Strategic Plan based upon past experience with lead poisoning control programs. Generally when parents know of a danger to their children they will do something about that.

Mr. SIKORSKI. Let me dissect that a bit. You have a uniform on. What's that uniform?

Mr. HOUK. It's Public Health Service.

Mr. SIKORSKI. Public Health Service. And the Federal Government has some kind of a role in public health, right?

Mr. HOUK. Yes.

Mr. SIKORSKI. And lead is the No. 1 toxic threat to our kids?

Mr. HOUK. Yes.

Mr. SIKORSKI. Strange.

So it's kind of caveat emptor in these buildings, these homes? Some people called them domiciles, most people call them their homes.

Mr. HOUK. Yes.

Mr. SIKORSKI. So it's caveat emptor.

That sort of likelihood of people voluntarily testing their homes and disclosing, that doesn't occur now.

Mr. HOUK. I personally know of no place where this is now going on on a voluntary basis.

Mr. SIKORSKI. The lessors, the landlords, in fact, have a pretty economic incentive not to do the test, not to find out. It might make that property a little less attractive, right?

Mr. HOUK. If they found lead-based paint and elected to remove the lead-based paint, it would cost them some dollars to do so.

Mr. **Sikorski**. And if they found it and didn't want to put the money into it, it would make it more difficult, probably, to sell the sunny room, air conditioning, lead poisoning?

Mr. **Houk**. If it were disclosed, I would agree with you.

Mr. **Sikorski**. And the buyers, as we understand; and the renters, as we understand today, just don't know about it.

Mr. **Houk**. I believe, Mr. Sikorski, that's true. The estimates of the number of houses in this country with lead just on the inside is about 30 million.

Mr. **Sikorski**. You were at the subcommittee hearing on lead poisoning in April—the Fandell family from Boston was here. You probably remember Crystal. She's about 5 years old and she's been poisoned.

Mr. **Houk**. Yes.

Mr. **Sikorski**. Her mother testified that she was not aware of the risk of lead poisoning until after Crystal was already diagnosed as lead poisoned and on intravenous, dilation, kind of technology that certainly doesn't reverse any retardation or physical problems that have been caused by the poisoning, and sometimes don't do enough to overcome what's commonly occurring on a daily basis in terms of new poisoning.

She also told us that if she had known about the risks of lead, she absolutely, definitely would not have moved into that home, and would have saved Crystal.

The testing and disclosure requirements in the Strategic Plan and in H.R. 2840 would provide that protection to Crystal and many other children—millions of other children like her. But the administration is now opposing them.

How do we protect Crystal?

Mr. **Houk**. Having seen Crystal and many, many other Crystals, one of the reasons the Strategic Plan has that provision in it is that we think that is essential. I was trying to find it, but I believe my testimony says the administration does not believe this is a necessary Federal role to require the testing and the disclosure.

Mr. **Sikorski**. Apparently it's a necessary Federal role for the Federal Government to get involved and save the Vice President's family, but it's not a necessary or important priority, Federal role, as defined by the administration, to get in and save the millions of kids that are affected by it.

Apparently it's a Federal role for the Competitiveness Council to get in and protect the few lead battery burners in this country so that they can put more lead poisoning in the air that kids breathe, but it's not an appropriate Federal role for the Federal Government to say that they should do what most municipal incinerators do and separate them out because they're valuable for recycling, but they also don't pollute that way.

Families have a right to know whether the homes that they buy, the homes that they rent, have toxic conditions for their kids. Given the risks involved, I think it's criminal, absolutely criminal, not to inform them. And some public education program that doesn't involve us and we say closer to those people, where the action is, closer to where the people are involved like someone else—local, city, State, county, points of light, NGO's, and others; corporations, whomever, can do it is crazy.

You've been watching this business for probably over a decade now, the subcommittee been's watching, and I've been watching it, and only when major things are happening with the First Dog and the First Lady and the President did the Vice President get educated on this problem.

If we can't educate him, how are we going to educate 240 million? Maybe it's a bad example.

Mr. HOUK. Try two decades, Mr. Sikorski. One of the things that we do is we work very closely with your State in developing some of the regulations that Minnesota is now doing. In the cities that have lead poisoning programs, we insist, by regulation, that some of these things that you're talking about take place.

Mr. SIKORSKI. I shouldn't be asking you these questions because you guys came up with the plans that are embraced in H.R. 2840 and make sense. And now you have to come because the OMB was to devise the curtain shaking, has told you to gag it.

You saw last night's program on Primetime Live? It showed the results of an investigation on lead and soils that they conducted. Urban neighborhoods, including my home State, which is, from that program, one of three that's taken action to deal with it. But very little has been cleaned up, abated.

In the process, lead from vehicle emissions has contaminated the soils, or garbage burners, or whatever. It's gotten into the soils. Kids, by necessity, play and get poisoned.

The program also reported that testing costs run about $40 and is one of the simple things that can be done to address the problem. If you don't have the problem, you can go on to other things that nurture and take care of your kids. If you do have the problem, then you know the size of it and you can cover with plastic, put wood shavings or wood chips on, and plant grass, and sod, and put sod on the rest of it.

Dr. Houk, but you can't now support inspection, disclosure?

Mr. HOUK. I strongly support inspections and disclosures. Where the responsibility lies to ensure that that is done is what I'm sure of.

Mr. SIKORSKI. How about the soil issue? You saw that program last night. Do you think that's a good place to do some inspections and disclosures, too?

Mr. HOUK. Yes, I believe it is very clear that residential soil above 1,000 parts per million is distinctly harmful to young children. How much lower than that has to be set and it depends on the pattern. There are some areas where 500 is——

Mr. WAXMAN. Thank you, Mr. Sikorski.

Mr. SIKORSKI. Thank you, Mr. Chairman.

Thank you, Dr. Houk.

Mr. WAXMAN. Dr. Houk, the leading areas of exposure to lead are from lead paint and from lead in drinking water. Is that an accurate statement?

Mr. HOUK. No, I believe for high-dose exposure, for most of the children the major exposure is from lead-based paint, and that comes not only from the paint itself but from the dusting and the contamination of the soil, and the dust around it.

Drinking water exposes more children than does lead-based paint because it's more ubiquitous. The Food and Drug Administration and the food industry have essentially—not completely—but essentially removed lead from processed food.

Mr. WAXMAN. I don't understand you. You said lead-based paint is the primary area where children are exposed.

Mr. HOUK. Right.

Mr. WAXMAN. How about drinking water?

Mr. HOUK. Drinking water is a source that contributes to exposure of almost all children.

Mr. WAXMAN. So those two—while there are other ways that children are exposed to lead—those are two major areas of exposure; isn't that correct?

Mr. HOUK. Yes. And since the removal of lead from gasoline—unless the child is around a point source that——

Mr. WAXMAN. You've done a good job there. That required Federal law, by the way, to remove the lead in gasoline. And we've succeeded finally in having done that. I believe we're going to need a Federal law to deal with drinking water sources of lead and this lead paint which our children are exposed to.

Now if we're going to deal with lead paint, we've got to have people to inspect these homes, we've got to have people removing the paint that has lead in it from these homes in a safe way. We need to have disclosures to people so that they know that the home they're about to buy or the apartment they're about to rent has excessive lead and their children may be exposed to it.

Do you agree with that?

Mr. HOUK. Yes, it's in the Strategic Plan, and I do.

Mr. WAXMAN. In drinking water, Dr. John Rosen, who was the—as I understood it—the head of the CDC Advisory Committee, said that 5 parts per billion of lead in water was a level he would consider safe.

We had 10 parts per billion in our bill.

Do you think 10 parts per billion is a reasonable prudent level that ought to be looked at as a maximum contamination level?

Mr. HOUK. In my view, it certainly should be no lower than that, Mr. Waxman. We have some differences with EPA about what level of lead drinking water should contain. But a level of 10 is certainly a safe level.

Mr. WAXMAN. Dr. Houk, I'm sitting here at this hearing right now awfully thirsty. We have pitchers of water, with little glasses, so that we can all take a little refreshing water. But after the survey we did, I know that if I take a sip of water, I'm going to have one out of three chance that I'm going to be exposed to lead in that water that's going to exceed 10 parts per billion.

In fact, the survey that we did of just the Capitol, showed that 21 percent of the taps had levels of at or above 15 parts per billion, 11 percent had lead levels at or above 20 parts per billion. We had two samples from water fountains that had levels of 80 or 95 parts per billion.

In 1989, in a report on Lead and Drinking Water in the Schools, EPA said that if there was anything exceeding 20 parts per billion that the water fountain ought to be taken out of service immediately.

Now this is the Capitol of the United States, where we have a one out of three chance of a child coming and visiting here and getting exposed to more lead, getting poisoned from lead from the exposure.

What does it do to adults, by the way?

Mr. **Houk**. Probably very little, sir; the adults can tolerate a lot more lead than the children.

Mr. **Waxman**. How about a pregnant woman working in the Capitol?

Mr. **Houk**. We're very concerned about the fetus and the pregnant woman, at those levels.

Mr. **Waxman**. Mr. Sikorski made the point and I don't want to belabor it, but he found excessive lead in water in the home of the Vice President of the United States. We see excessive levels of lead in the drinking water in the Capitol of the United States. The Environmental Protection Agency, which, by the way, refused to come and testify today, with a great deal of fanfare again, said they were going to do something about levels of lead in water, and then established a plan that said maybe 20 years from now we would do something to reduce the levels of lead, but not even setting a maximum contamination level of lead.

It just seems to me what I'm seeing is an administration that should know that this is a serious enough problem to do something about it; not just in the Vice President's home, not just in the Capitol of the United States, but throughout the country.

And if we don't take that responsibility, here at the Federal level, we could just clearly see that no one else is taking that responsibility all across the country.

By the way, we didn't just learn about the problem of lead, did we?

Mr. **Houk**. No, sir.

Mr. **Waxman**. How long have we known that the lead is a poisoner of children?

Mr. **Houk**. This has been scientifically known about lead-based paint since the late 1800's in Australia and became a concern in this country in the 1940's. We started to take very specific action in the late 1960's. And, unfortunately, as you are aware, each time we've set a limit of what we thought was a safe level of lead based upon the testimony then. As we've done more studies, we've found that that is not safe, and we have to go to lower levels.

Mr. **Waxman**. So the problem, in spite of all this time in which we've known that there is a problem, is enormous in this country. And what I hear the administration saying is that rather than adopt laws to implement the strategies that the Centers for Disease Control recommended, we ought to hope that those problems will be solved at the private sector level.

And the best example of why that won't work is that it hasn't worked, and we have still this tremendous problem.

My time has expired.

I do want to recognize Congressman McMillan. He hasn't been here for the first round.

Mr. **McMillan**. I apologize for being late. I couldn't get here on time, unavoidably. So if I'm a little redundant, forgive me, Doctor.

Let me ask you this with respect to Federal action in this area. Has the Health and Human Services had any experience in training inspectors for this type of activity?

Mr. **Houk**. We have not. Under the Superfund legislation, the National Institute of Environmental Health Science has a training program for hazardous substance people working in those areas around Superfund sites.

Mr. **McMillan**. Who does have the base of experience in terms of training inspectors for water inspection?

Mr. **Houk**. Some States, very few States.

Mr. **McMillan**. Very few States?

Mr. **Houk**. Yes.

Mr. **McMillan**. But hasn't inspection of water supplies normally been a State or a municipal activity?

Mr. **Houk**. I'm talking about lead-based paint today.

Mr. **McMillan**. I understand that.

Mr. **Houk**. Yes.

Mr. **McMillan**. So no one, virtually then, has significant experience inspecting for this problem?

Mr. **Houk**. With regard to providing specific kinds of training, I think that's a fair statement.

Mr. **McMillan**. Why don't they have that experience?

Mr. **Houk**. I wish I knew.

Mr. **McMillan**. Who knows?

Mr. **Houk**. I think that in doing lead-based paint abatement, which began in earnest in the 1970's when the old Lead-based Poisoning Prevention Act was in effect, the safe removal of paint became a critical element of that program. This was done in the cities setting up their own basic program.

The State of Massachusetts has probably the most comprehensive one around. The city of Baltimore has a reasonably comprehensive program but it is fairly spotty. It's not uniform.

Mr. **McMillan**. Do these same States and municipalities have adequate inspection systems for other potential threats to the water supply?

Mr. **Houk**. I would have to defer to EPA on that for the measurement of the contaminant in the water supply and how effectively that's being done.

Mr. **McMillan**. I guess I'm really trying to get at why they haven't focused on lead if they focused on other potential threats.

Mr. **Houk**. Again, I would have to defer to EPA to answer that question. I am not knowledgeable on that.

Mr. **Waxman**. Will the gentleman yield?

Mr. **McMillan**. Yes.

Mr. **Waxman**. It seems to me that we don't have people who have expertise in this area of lead inspection because we haven't had people trying to find anybody to do that job, since nobody either insisted that the job be done, and the private sector hasn't really felt that it's enough of a threat even though they've heard about it in the newspapers.

Doesn't that seem to be the reason?

There's no infrastructure for inspection in this lead decontamination because no one's ever insisted that there be inspection, disclosure, and lead decontamination.

Mr. **Houk**. Which is correct, Mr. Waxman. That's the reason that the chapter on infrastructure in the Strategic Plan is there, and why we think it's important.

Mr. **McMillan**. I'm not trying to make a case for the private sector. In fact, my perception of the private sector doesn't have the responsibility for inspecting oil supplies; States and municipalities do.

Oh, excuse me, I misunderstood your point.

Dr. Houk, you stated in your statement that we tend to think about each source of lead individually.

Can you tell me anything about the relative exposure from soils and from paint?

Mr. **Houk**. Paint is the major high-dose exposure for the majority of children. The paint contributes to the exposure, both from the peeling and the flaking paint, and the child's mouthing paint around door sills, et cetera, and from its contribution to soil and lead.

The lead in soil and dust comes from lead paint; from gasoline emissions previously that have deposited; from point sources; from some pesticides; it comes from a whole host of different sources.

Water contributes, to the best of our estimation now, between 10 and 20 percent of the body burden of lead for the average child in this country.

Mr. **McMillan**. This is the normal water supply you're suggesting?

Mr. **Houk**. Yes.

Mr. **McMillan**. Would you just expand a little bit on what you mean by body burden?

Mr. **Houk**. Body burden is the amount of lead a child has absorbed throughout its lifetime and has retained in its body, and is generally measured by blood leads, although there are better measurements on this.

Mr. **McMillan**. Presumably the same would be true for adults as well?

Mr. **Houk**. The same is for adults. The average blood lead for a child in this country, to the best of our estimate at the moment, is somewhere around 6 or 7 micrograms per deciliter. And that puts, in our estimate, 3 million to 4 million children above 15 micrograms per deciliter.

Everybody agrees, there is no dissent, or there is no legitimate dissent—that blood levels of 15 micrograms per deciliter in children are harmful to children. That's 17 percent of our children.

Mr. **McMillan**. Would the same hold true for adults?

Mr. **Houk**. No. The adults can tolerate a great deal more lead than can the child. The major effect of low levels that we're concerned about on the child and the fetus harm to the developing brain and the neurologic system.

There is very good evidence, which we have stated here many times before, and Dr. Needleman is here and can speak to it himself, that the children with "high lead,"—which is really not very high—don't finish high school very often compared to normal children, because of the neurologic impairment that's done to the child.

The consequences of lead exposure in children is the moving of the IQ score down, and I believe I testified the last time that nothing could be worse to a society of not having any children with geniuses in a population.

Mr. **Waxman**. Thank you, Mr. McMillan.

Mr. **McMillan**. Thank you.

Mr. **Waxman**. Mr. Sikorski, do you wish more time?

Mr. **Sikorski**. Thank you, Mr. Chairman.

Dr. Houk, you hit a point and this is a long hearing today and some of us are going to stay here for it, most people will start drifting out and the rest of it, but it's absolutely essential that people understand that this is a terrible and evil thing. Lead doesn't belong in human bodies. It affects adults but it really goes after kids because they're more vulnerable, and the younger the kid, the more vulnerable it is, right?

Mr. **Houk**. Yes. We are harming children because of something we put into the environment.

Mr. **Sikorski**. And beyond that, it's an evil and terrible thing because not only does it go after the body—certain organs, the kidneys, even the heart—but it really goes after the brain, the mind, the human intellect, and it reduces IQ's.

It not only makes—and Dr. Needleman will talk about this—but it not only makes average kids retarded, retarded kids more retarded; it makes near geniuses just above average, and it makes geniuses near geniuses. It moves the IQ level of American society down.

And we don't know what that will do but we can be assured we won't get the answers to dirty air, lead poisoning, national security, weapon systems, exploration, global warming, you name the problem—Alzheimer's disease, cancer, business initiatives—we're not going to get the answers as readily or as creatively as we would have gotten them as a society. Is that okay?

Mr. **Houk**. Yes, and there's a lot of things we won't get, Mr. Sikorski; but there's a lot of things we will get. We will get youngsters who no longer have the educational ability to finish high school, who don't have the intellectual curiosity to go ahead to do things. We will have youngsters who have a greater propensity for delinquent activities, for drug-related activities, and for the whole host of things associated with what is happening to these kids.

Mr. **Sikorski**. We'll get more kids qualified for low income, low but no benefit deadend jobs. We'll get a lot of kids who qualify to serve in prisons and be drug addicts, and to cost the taxpayers.

Mr. **Houk**. In my opinion, yes.

Mr. **Sikorski**. So why should we wait?

Mr. **Houk**. The Strategic Plan that the Department put together sets out a course that makes it possible to eliminate the childhood lead problem from this country as a public health problem in the next 20 years.

Mr. **Sikorski**. If these kids are really vulnerable, say 1 to 6, that's 3½ generations of kids if we wait for the 21 years, and the drinking water, if we wait. There are certain things that can be done right now.

That's why it just drives me up the wall. This is evil and terrible stuff, and we're doing it. And then the administration, because of the Office of Management and Budget—a bunch of bean counters and lawyers who don't understand medicine or public health, or let alone, care about it, gag people and stop them from moving. I think it's as most corrupt and contemptible act I can think of in government is to see this problem and to be told about it by the professionals—the health professionals—and then to stop and to footdrag, and sloganeer, and eliminate protections that are pretty easy and pretty cheap for our kids.

Let me ask you, the HUD's Report on Lead Poisoning defined a lead hazardous peeling paint or high levels of lead dust. Some States—Massachusetts, Maryland included—said that lead paint on chewable surfaces is a lead hazard as well.

Would you agree?

Mr. HOUK. Absolutely. In fact, it's one of the major sources to anybody who has a child. Looking at the activity of that child; or while the child is teething, you will see him or her spending hours and hours at door sills and on doors, the window sills—mouthing that. It's a very important part for the definition of "hazard."

Mr. SIKORSKI. Thank you, Dr. Houk.

Thank you, Mr. Chairman.

Mr. WAXMAN. Thank you, Mr. Sikorski.

Mr. Hastert.

Mr. HASTERT. Thank you, Mr. Chairman.

I want to go back to the history of this—you gave us kind of a quick look at the history. Lead paint has been used through the 1800's; became a problem in the 1940's, and seriously focused in the 1960's.

Is lead paint used today?

Mr. HOUK. The Lead Poisoning Prevention Act required that all paint manufactured after, I believe it's June 17, 1976 or 1978, not contain more than 6/100ths of a percent lead for interior surfaces. That means that no lead can be intentionally added to the paint. Lead paint is still being manufactured for exterior surfaces, for industrial surfaces, and for other purposes. And it is not at all uncommon to have that paint being used on the inside of houses and to paint furniture.

Mr. HASTERT. Is there something in lead that is necessary for these types of coatings?

Mr. HOUK. Lead, apparently, makes a better product—easier to use, and there aren't substitutes for everything. But if it is a better product, people ought to be aware not to use leaded paint on children's furniture which, although that's prohibited by law, it still occasionally happens—not by the manufacturer, but by other people.

Mr. HASTERT. Somebody who has a can of paint in their garage and decides to paint——

Mr. HOUK. Let me give you a specific example. I believe just about 3 years ago, the city of Houston bought some paint that had about 10 percent lead in it and painted all the furniture in the schools.

Mr. HASTERT. Let me ask you another question about the incidence of lead. In more modern homes, there's less lead, right? There's been a lot of homes in this country built since the 1960's?

Mr. HOUK. There's less lead-based paint but, unfortunately, the newer homes may have more lead in the water because of the lead solder used in the plumbing of the house.

Mr. HASTERT. Why? Because that leaches out over——

Mr. **Houk**. It leaches out for about the first 5 years, yes, sir. Lead solder is prohibited from being used now, but some of its still being used——

Mr. **Hastert**. I happen to remember sitting on the Licensing Board Committee in our General Assembly and trying to change the union standards of licensing for lead and the lead use in pipes. And, of course, the Chicago union's coming down and turning around the Democratic majority that ran that committee and we failed to be able to pass better legislation to prohibit that. But that was another situation that happens in the States.

Can we say that the housing that has lead infiltration in it in the paint, is that a certain type of a housing stock? I mean, is it more prevalent in old HUD buildings, or old domiciles, or row houses, or what?

Mr. **Houk**. Generally in housing built before about 1970, there's a very high prevalence of lead paint in the housing.

The amount of lead in housing stock, or the amount of lead in public housing, varies from city to city depending upon how much lead paint was used in that particular housing.

Mr. **Hastert**. Now, my fine colleague on the other side of the aisle a few minutes ago talked about housing that was owned by the Federal Government and when there was a discovery of lead there they changed it. The Federal Government happens to be the landlord for that. Do you think that the landlords or those people who own those properties are responsible for removal?

Mr. **Houk**. Yes.

Mr. **Hastert**. They should be?

Mr. **Houk**. Yes.

Mr. **Hastert**. And whether it's water or lead paint?

Mr. **Houk**. Yes.

Mr. **Hastert**. No matter what the cost?

Mr. **Houk**. That's the economics that they would have to deal with.

Mr. **Hastert**. It's a health issue, right?

Mr. **Houk**. Most cities which have ordinances would not allow the rental of a house that contained unsafe electrical wiring that was going to create a fire.

Mr. **Hastert**. So we can have those same type of ordinances and have the owners of those domiciles, or homes, or apartments responsible also?

Mr. **Houk**. It's my view that this is a very important issue and it also has to be very carefully considered because of the problem of affordable housing, et cetera. It's not simple.

Mr. **Hastert**. But to do that as you would inspect a house for electrical wiring, you'd have to inspect that house for lead, right? When we get down to that we have to have some system in place, whether the cities do it, or the counties do it, or the State does it, that has to be done?

Mr. **Houk**. I believe it is essential.

Mr. **Hastert**. Thank you.

Thank you, Mr. Chairman.

Mr. **Waxman**. Thank you, Mr. Hastert.

Dr. Houk, we thank you very much for your testimony today. We'll look forward to working with you.

I'd like to now call forward to testify, Dr. Herbert L. Needleman, professor of psychiatry and pediatrics, University of Pittsburgh School of Medicine; Dr. Ellen K. Silbergeld, adjunct senior toxicologist for the Environmental Defense Fund; Dr. Douglas M. Hanson, president, WaterTest Corporation, from Manchester, N.H.

We are pleased to welcome the three of you to our hearing today. Your prepared statements will be in the record in full. We'd like to ask, however, that you limit the oral presentation to no more than 5 minutes.

Dr. Needleman, why don't we start with you?

STATEMENTS OF HERBERT L. NEEDLEMAN, PROFESSOR OF PSYCHIATRY AND PEDIATRICS, UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE; ELLEN K. SILBERGELD, ADJUNCT SENIOR SCIENTIST, ENVIRONMENTAL DEFENSE FUND; AND DOUGLAS M. HANSON, PRESIDENT, WATERTEST CORPORATION OF AMERICA

Mr. **Needleman**. Good morning, Mr. Chairman. I am Herbert Needleman. I am professor of psychiatry and pediatrics at the University of Pittsburgh. I'm also a member of the American Academy of Pediatrics Committee on Environmental Health in the Institute of Medicine.

I'm pleased to be here to testify in support of H.R. 2840. I congratulate you and Mr. Sikorski on recognizing an important problem and dealing with it effectively.

When I last testified here in 1979, there was considerable disagreement about the impact of lead at low dose on children. That's been effectively settled in the period since that time. And there is a broad consensus on the part of everybody, except the lead industry and its spokesmen, that lead is extremely toxic and at extremely low doses. The safe level of it has yet to be defined.

In 1979, the actions of your committee were instrumental in bringing into concordance the science at that time with the Federal policy. And as a result, legislation allowed the removal of lead from gasoline, blood leads in this country in children and adults dropped step by step over time. That was a real public health triumph, and this committee deserves a major part of the credit for that action. That was a Federal action that was necessary and effective.

Since I testified, then, there's been an explosion of scientific knowledge from human studies and from the animal laboratories about the effects of lead. As a result of that, we now recognize official Federal declarations that this is the most serious environmental disease of children. And, as you know, Dr. James Mason commissioned the CDC to issue a Strategic Plan, which is a historic document. It needs legs.

I want to make three points.

The first is that the more we study lead, the more we find effects at lower and lower doses in broader and broader systems in the human body. That process is not over, but we now know that the toxic level of lead in children can be measured at least down to 10 micrograms per deciliter in the child's blood. And that 17 percent of all American children exceed 15.

Being rich does not immunize you against having lead toxicity. Seven percent of favored whites, according to the Agency for Toxic Substances, have blood leads over 15. Being poor, however, increases the risk radically.

Of black children in poverty who enter the first grade, 55 percent begin their education with this handicapping condition. That is a datum that our society will reject at its peril.

The second point I want to make is that this disease is totally preventable. Dr. Mason at CDC acknowledged that.

The third point is that in doing this, we can accomplish a number of social goods. If you map where lead is piled up in super abundance, and if you map where decent housing is in short supply, and if you map where jobs are in short supply, the three maps are virtually identical.

So what would a rational, unbound person do with this disequilibrium? You might say, why don't we take the unemployed and train them in safety leading and pay them, and for the same health dollar we could get a decrease in unemployment—a very dangerous factor in our Nation at this point—put more housing back into decent circumstances, and wipe the disease out.

This is, I think, perhaps utopian, but I think it's practical utopianism.

The most important cause of lead poisoning is paint—there's no disagreement about it. Water is important. Dust is important. Soil is important. But of the children that I see in my clinic every Wednesday with blood leads of 25 or 30, and reports of behavioral disorders, or speech retardation, we generally identify in a high proportion of those children peeling paint that the child has access to.

And occasionally I see a kid with a blood lead of 80, and in that circumstance there's no doubt about what the source was—we find the peeling paint in that household.

Now we've known about lead poisoning since antiquity. We've known about childhood lead poisoning for 100 years. But very little has been done about this disease. I've pondered this and I've identified at least four factors that are responsible for the fact that we have not dealt with this effectively and are perhaps only beginning to do something about it.

The first is the conventional wisdom is that it is a disease of poor inner city minorities. And related to that is the implicit assertion that if the mother took better care of the child, this child would not have gotten sick. And once that happens, then Federal or local responsibility is jettisoned.

The second is that with the passage of the Lead Paint Poisoning Prevention Act and the removal of lead from gasoline, some people assume that the disease has disappeared. That, in fact, is not true. Blood leads have come down but we now recognize toxicity at lower level doses.

In the third place, academic medicine has not been charmed by this disease. It's not liver transplants or gene therapy. You don't see any advertisements of corporate jets taking children to hospitals for treatment for lead poisoning.

The fourth has been discussed here already this morning, and that's the failure of some parts of the Federal Government to deal effectively with this. I exempt the Federal Public Health Service and CDC from this.

When I first began to get into this field about 20 years ago, or more, there was a nebulous organization called the Bureau of Community Environmental Management, which had responsibility for lead. This was turned over to Dr. Houk in the CDC, and the first time a professional approach began to take place and we began to understand and deal with the disease. The lead industry has attempted to obscure this.

So there are four or five reasons that have to be understood if we're going to deal effectively with lead poisoning.

I want to close by telling you a little anecdote. In 1963, the Director General of the World Health Organization was approached with a plan to eradicate smallpox, and he was skeptical about this in the extreme. He did not want to do it but his hand was being forced, so he said, it's going to fail, so let's appoint an American to head it. And the CDC and Dr. Donald Henderson headed that. On Dr. Mason's wall there's a plaque celebrating the 10th anniversary of the last case of smallpox.

This is an eminently preventable disease. We can have the same course if we have the same kind of dedication in dealing with lead poisoning.

I think the bill that you propose does give legs to the Strategic Plan and is a healthy first step in that direction.

Thank you.

Mr. WAXMAN. Thank you very much, Dr. Needleman.

[The prepared statement of Mr. Needleman follows:]

TESTIMONY of HERBERT L. NEEDLEMAN

Good morning, Mr. Chairman. I am Herbert L. Needleman, M.D. I am professor of psychiatry and pediatrics at the University of Pittsburgh School of Medicine. I am also a member of the Committee on Environmental Health of the American Academy of Pediatrics. I am pleased to be here to testify in support of the Lead Contamination Control Act of 1991. When I last testified before your Committee in 1979, there was considerable disagreement about the effects of lead at low dose on children. This argument has effectively been settled by a large number of scientific investigations from centers around the world. It is fair to say that only the lead industry and its spokespersons dispute the assertion that lead is an extremely powerful brain poison, and the safe level of it for humans has yet to be defined.

Your Committee's actions in 1979 were critical in bringing federal policy into concordance with the best science available at that time. The air lead standard was revised, lead was virtually removed from gasoline, and the blood lead levels of American children have come down in parallel with the amount of lead put into the air. This was a major public health triumph, and this Committee played a central part in the action.

Since I testified in 1979, there has been an explosion of high quality studies of lead's impact on children. In recognition of this rapidly changing but compelling picture of lead poisoning, the Department of Health and Human Services made a major departure in its response to the problem. Secretary Louis Sullivan has stated that lead exposure is *the* most important environmental health problem for American children. On February 21, 1991, in the United States Senate, Assistant Secretary of Health James Mason announced a plan to eradicate childhood lead poisoning. The current body of scientific data about lead -- where it is, what it does, and what is needed to eliminate it -- has become too vast and convincing to disregard.

Many well conducted epidemiologic studies of low level lead exposure in children have been reported in recent years. Almost all converge on the conclusion that lead is associated with disturbances in cognition, behavior and attention at levels below those that cause frank symptoms. In 1990, Constantine Gatsonis and I published a meta-analysis of all 24 modern studies, and showed that the joint P value of the included studies was well below 0.0001. This joint probability was not influenced by any single study. When an analysis of whether unpublished negative studies could change the inference was accomplished, this question, known as the "file drawer problem," was effectively dismissed. In order to dilute the joint probability, there would have to be 93 unpublished (and unknown) negative studies languishing in the files of investigators somewhere.

The experimental literature on low level lead intoxication is huge, and continues to show lead effects at lower and lower doses, in systems previously not recognized as lead targets. A few recent examples suffice to demonstrate the span of lead effects: Lead affects tRNA structure, the development of the endogenous opioid system, and brain protein kinase C at extremely low concentrations. Studies of lead given to immature monkeys at doses congruent with human exposure have shown behavioral changes that closely model the human findings.

The Agency for Toxic Substances and Disease Registry reviewed the studies' newer data on lead toxicity, and the National Center for Health Statistics exposure data. They updated the data to reflect secular changes in blood lead levels, and estimated that 3-4 million children have toxic levels of lead in their blood.

The federal definition of lead toxicity is now 10 μg/dl. The new definition puts an extraordinary number of children at neurotoxic risk. These data indicate that 17% of all children, regardless of race or socioeconomic status, have blood lead levels in the toxic range. Being white and well off does not shield a child; but being poor or black radically increases the risk. Over 50% of black children in poverty enter the first grade with elevated blood lead levels considered neurotoxic. Our society will ignore this datum at peril to its survival.

In 1990, we followed up children from our 1979 Boston lead study into young adulthood, and found that having elevated lead stores, but no signs of poisoning, was associated with a 7-fold risk for failure to graduate from high school, and a 6-fold risk for reading disabilities. The effects of lead are long lasting, and are expressed in functions that spell out life success. We reported this in the New England Journal of Medicine, and I enclose a copy for the record. We are concerned in this country about competitiveness. There is no greater threat to our international competitiveness than a citizenry with impaired learning and reading ability.

Given that lead toxicity is no secret, and that more data documenting this is available than for any other neurotoxin, one is compelled to ask why so little real prevention has occurred until now. There are many factors that have retarded progress in eliminating this disease. First is the enduring belief that this is a problem for poor inner-city black children alone. Related to this is the assertion that the mother's inferior care is responsible for the child's lead exposure and poor learning ability. Society has always been myopic about the problems of poor minorities, and once the mother has been blamed for the problem, official consciences can rest. In addition, academic medicine has not been *charmed* by the problem of plumbism; it does not carry the intrigue of molecular biology or the drama of major organ transplantation. There are no airlines taking lead poisoned children to Disney World, or lifesaving corporate jets bearing them to hospitals.

Some authorities believe that the passage of the Lead Paint Poisoning Prevention Acts and the removal of lead from gasoline have eliminated the disease. The lead industry and its academic spokespersons have labored mightily to obscure the health effects of lead. This is not a new phenomenon; Rosner and Markowitz, and Rabin detailed in the American Journal of Public Health the influence of the industry in camouflaging the toxic

417

properties of lead. Industry representatives, some of whom hold academic appointments, are still attempting to cloud the issue, and misrepresent the current data.

The inactivity of some government agencies -- and here CDC is notably excepted -- has contributed to the sluggish pace of official action. In the past, the Department of Housing and Urban Development (HUD) has been the worst perpetrator. After HUD was assigned the task of estimating the size and nature of the lead problem in 1972, they discovered that meeting their own responsibility to remove lead from houses would cost $30 billion. This launched HUD onto a furious effort to assign the blame for lead poisoning to any source but paint. Their attempts to obscure the risks of leaded housing were so egregious that they became the subject of a GAO report entitled *"HUD Not Fulfilling Its Responsibility to Prevent Lead Paint Poisoning."* HUD has continued to run from its responsibility to reduce lead poisoning in their properties. An Assistant Secretary for Research at HUD was quoted as saying, in response to the announcement of the Strategic Plan, that more money to abate housing was not needed, that funds were available for home rehabilitation, but that people had simply not applied for them.

The final reason for the lack of action over lead is perhaps the most intractable. While, on one hand, many think the disease has been eradicated, perhaps an even larger number think the problem is too large to handle. The idea that millions of children may suffer lead intoxication, and that millions of houses are in need of abatement, produces a reflex wave of pessimism. Self-styled realists will argue that this is too expensive and that society could never find the money for such an enterprise.

Of all the sources of lead for children, paint remains the most important. There are 30 million homes in the United States that have leaded paint surfaces. There are 3 million homes that have peeling deteriorated leaded surfaces and in which young children live. These are the equivalent of the "pest houses" of Dickens' England. Each child in one of these homes must be considered at urgent risk for lead engendered brain poisoning.

The eradication of lead poisoning presents a unique opportunity to address many of the other urban pathologies that afflict our nation. To abate the 3 million houses that house children will require a large labor force, and there is no shortage of men who can't find work in precisely the same areas where lead is in excess. The removal of this toxin could provide an opportunity to put people back to work and restore houses where people live to decency. It is reasonable to ask whether we can afford not to mount this effort.

In 1963, when the Executive Secretary of the World Health Organization was approached with a plan to eradicate smallpox, he scoffed. Because he believed it was doomed to failure, he requested that an American be asked to direct the project and thus take the heat for its failure. Dr. Donald Henderson and CDC accepted the challenge, and today smallpox is a disease for the history books. Lead poisoning, this silent, relentless destroyer of brain cells, can have the same fate if we have the same kind of vision.

I believe that the proposed legislation is an important step in achieving the federal goal of eradicating this singular environmental disease. There is a prevailing mood of pessimism afloat in this country, and many people distrust the political process. More importantly, many have lost confidence in our ability to control our destiny. Here is a chance to eradicate a disease, and relearn that we are in charge of our lives and our children's futures. I thank you for the opportunity to testify in support of the legislation. I am pleased to answer any questions you might have.

Mr. WAXMAN. Dr. Silbergeld.

STATEMENT OF ELLEN K. SILBERGELD

Ms. SILBERGELD. Thank you.

On behalf of the Environmental Defense Fund, I'm pleased to be invited to submit testimony on this important public health issue of reducing childhood lead poisoning in the United States.

I'm Ellen Silbergeld, adjunct senior scientist in the toxics program at EDF and I'm also a professor pf Pathology in the toxicology program at the University of Maryland Medical School.

I chair the Advisory Council on Lead Poisoning for the State of Maryland, and I'm proud to be a founding board member of the Alliance to End Childhood Lead Poisoning.

Accompanying me today is EDF Senior Attorney Karen Florini, who has also worked very closely on this topic.

The government's position, as you've heard already, seems to be, don't just do something, stand there. It is absolutely incredible, particularly that EPA, with its oft proclaimed focus on prioritizing efforts to reduce real risks, is unable to take effective measures to deal with the single most significant environmental health threat to U.S. children.

Lead poisoning, as Dr. Needleman said, is a wholly preventable disease of environmental origin. It is associated with chronic exposure to the element lead. Lead is toxic to all living things and has no known biologic function. It is particularly, although not exclusively, toxic to young children.

I want to stress that the effects of lead on children may also be transmitted through exposure of their parents. Maternal lead exposure can reduce birth rate and affect neurobehavioral development of the young child, but paternal exposure can also affect the neurologic development of the child.

Lead poisoning exerts enormous medical, social, and educational costs. These are either paid directly, in terms of outlays for screening and treating lead-poisoned children, and then providing special education for them; or they are paid indirectly, in terms of exacerbating the crisis of education and social order in our cities.

Legislative action is clearly needed to ensure effective prevention of childhood lead poisoning.

The strategic plans that you've heard and discussed already are short on actual proposals for intervention and prevention and are largely devoid of funding in any event. The Agencies, EPA particularly, in its recent promulgation of deficient and long overdue regulations on lead and drinking water is a clear example of the unfortunate pattern of inaction.

As Dr. Houk stated, lead in drinking water is a ubiquitous source of lead that contributes to the relatively high average exposures of Americans. For instance, American children on average have doubled the blood lead level of those estimated to occur in Scandanavian or Japanese children.

EPA's craven performance in evading the mandate of the 1986 Safe Drinking Water Act Amendments with respect to lead demands corrective action by Congress, and H.R. 2840 does this in important ways, which we support.

In addition, the bill provides for a comprehensive and integrated approach to reducing childhood lead poisoning. Lead paint hazards, for example, as noted in the proposed legislation, are the most intense exposure hazard to young children and their families. And the bill recognizes that current approaches are in no way preventive.

The trouble is with lead in paint that sooner or later virtually all homes which contain lead paint will become a source of exposure for young children. At present, in most cities, local regulations and practice allow hazardous homes to be recycled into the housing market as long as the particular poisoned child is removed from the premises.

Now, my teacher, Julian Chisolm of Johns Hopkins, has called these "killer houses" where child after child is poisoned without action taken to abate the hazard effectively and permanently. This is not prevention. We must recognize that lead paint will continue to be present in at least some American residences for the rest of the lives of most of us present in this room today. We must create laws and regulations that reflect that knowledge and empower the consumer to act upon it. H.R. 2840 does that and we support it.

However, we also recommend that hammer provisions be included in this legislation in order to ensure a timely integration of warning and consumer protection.

We also applaud the inclusion of a mandate for public education in section 2804, and we suggest that the committee specify a particular role for the Agency for Toxic Substances and Disease Registry in this process.

We applaud the inclusion and extension of protection from lead paint hazards and other hazards to children in schools and day care centers. We know that children have been poisoned at these places and existing Federal programs are nonexistent, State oversight is poor.

We strongly support the provisions for the training and certification of workers. With growing public concern over lead hazards there's a parallel growth in the new industry of lead hazard abatement.

I would point out, contrary to Dr. Houk's statement, that the Department of Health and Human Services has an exemplary record in this area through the training of hazardous waste abatement workers in NIEHS.

We also support provisions of this bill in reducing sources of lead in food, and increasing and improving screening efforts by CDC, although we recommend a minimum of $150 million appropriations annually. And there are additional actions which are required to reduce lead poisoning, some of which are outside the scope of H.R. 2840.

In conclusion, we want to strongly congratulate you, Mr. Chairman, and the rest of Congress involved in the introduction of H.R. 2922, the Lead-Based Paint Hazard Abatement Act of 1991, which will establish a dedicated trust fund for the abatement of priority lead paint hazards in the United States.

This is a major undertaking of critical importance, and one that will not occur if left to be financed as it is now by the States and the private sector with the merest provision of Federal moneys.

This is a most important and innovative approach to a major environmental problem, and we congratulate you for your role in this as well.

Mr. **Waxman**. Thank you very much, Dr. Silbergeld.

[Testimony resumes on p. 461.]

[The prepared statement of Ms. Silbergeld follows:]

TESTIMONY OF

ELLEN K. SILBERGELD, Ph.D.
ADJUNCT SENIOR SCIENTIST
ENVIRONMENTAL DEFENSE FUND

On behalf of the Environmental Defense Fund (EDF), a national environmental research and advocacy organization with over 200,000 members throughout the United States, I am pleased to submit this testimony on the important public health issue of reducing childhood lead poisoning in the US.

I am Ellen K. Silbergeld, Ph.D., Adjunct Senior Scientist in the Toxics Program of EDF, in which capacity this testimony is submitted. I am also Professor of Pathology in the Toxicology Program of the University of Maryland at Baltimore, chair of the Advisory Council on Lead Poisoning for the State of Maryland, and founding board member of the Alliance to End Childhood Lead Poisoning. Since 1972, my scientific research, at Johns Hopkins, the National Institutes of Health, and now the University of Maryland has largely concerned the neurotoxic effects of lead on the developing brain. Accompanying me today is EDF Senior Attorney Karen Florini, who works closely with me on EDF's lead poisoning prevention project.

For two decades, EDF has urged the Environmental Protection Agency, the Food and Drug Administration, the Consumer Product Safety Commission, and the federal health agencies to take comprehensive action to eliminate childhood lead poisoning by reducing sources of lead exposure in the nation's air, water, and food supply. Unfortunately, in most cases, congressional oversight along with litigation by environmental and consumer organizations has been required to ensure that effective actions were actually taken. Once again, we must ask Congress to step in because of the failure of the executive branch to deal with critical sources of lead in the environment, sources that are known to contribute to the incidence and severity of childhood lead poisoning in the US.

It is incredible that EPA, with its oft-proclaimed focus on prioritizing efforts to reduce risk, is unable to take effective measures to deal with the single most significant environmental health threat to US children. This is not merely my view or that of the environmental health community. This is the characterization of the US Public Health Service and the Secretary of Health and Human Services, Dr. Louis Sullivan.

In this testimony, I shall briefly review current biomedical information on lead toxicity, and then comment upon the specific provisions of H.R. 2840, the Lead Contamination Control Act of 1991. Finally, I shall note other areas of lead poisoning prevention that warrant immediate consideration by Congress.

The Nature and Extent of Childhood Lead Poisoning

Lead poisoning is a wholly preventable disease of environmental origin, induced by chronic exposure to the element lead. Lead is toxic to all biota and has no known biological function in living organisms. It is particularly (although not exclusively) toxic to young children, for three reasons: first, young children are at greater risk of encountering lead in the general environment because of their behavioral patterns; second, young children absorb more lead than do older children or adults; and third, the developing brain of the child may be a specially susceptible target for lead neurotoxicity. Because the nerve cells of the human brain are non-replaceable, neural development takes place only once. It is not recapitulated, and it has only a limited capacity for later repair. Agents, like lead, that interfere specifically with the early "hardwiring" process of neural development induce permanent damage to the highly complex organizational structure of the brain.

The effects of lead on children may also be transmitted through exposure of their parents. Paternal lead exposure is associated with strabismus (eye defects) as documented in a recent report from Johns Hopkins. We have found that exposure of male rats results in abnormal brain development in their offspring. Maternal lead exposure reduces birth weight and also affects neurobehavioral development of the young child. Moreover, lead absorbed by a woman and stored in her bones years prior to conception can be transmitted to the fetus during pregnancy. Both paternal and maternal effects are observed at relatively low exposures. Thus, a concern over childhood lead poisoning demands integration of exposure controls for adults as well.

The extent of lead poisoning in the US has been comprehensively described in the 1988 Report to Congress prepared by the Agency for Toxic Substances and Disease Registry (ATSDR). These data, based on national surveys and source evaluations, demonstrated for the first time the epidemic proportions of childhood lead poisoning in the US. Using these data, EDF has projected city-by-city prevalence estimates for the numbers of children with blood lead levels in excess of 10 and 15 micrograms per deciliter, the range considered to be of medical concern by most medical authorities, including the Centers for Disease Control and the American Academy of Pediatrics. While these estimates are necessarily imperfect in light of limitation in the underlying data, it is all too clear that the incidence of unacceptable lead levels in children surpasses that of most of the highly visible diseases and environmental health issues.

This high incidence has both present and future impacts upon the US. At present, lead poisoning exerts enormous medical, social, and educational costs. These are either paid directly, in terms of outlays for screening and treating lead-poisoned children and providing special education for them, or they are paid indirectly, in terms of exacerbating the crises of education and social order in our cities. The burden of poorly educated and intellectually impaired youth will continue to constrain our future as a productive and competitive society.

Legislative Action Needed to Ensure Effective Prevention of Childhood Lead Poisoning

The ATSDR report provides a blueprint for effective disease prevention policy. Regrettably -- indeed tragically -- three years have gone by with only minimal and inadequate follow-up by responsible agencies. The ATSDR Report to Congress may be one of the most important presentations of a federal health agency on a matter of public health since the inception of the Surgeon General's reports on smoking. Congress must take up the challenge to ensure that action follows upon this extraordinary analytic document.

In the past three years, EPA, CDC, and HUD have each produced "strategic plans" or similar documents related to preventing childhood lead poisoning. Although these documents were delayed by the Office of Management and Budget, they were released prior to the last hearings of this Subcommittee. Taken together, these documents again acknowledge the devastating impact of lead poisoning on America's children and identify the key sources of lead in the US environment.

Unfortunately, they are short on actual proposals for intervention and prevention, and are largely devoid of funding in any event. EPA particularly seems unable to move from identifying the problem to issuing actual regulations under the many statutes that amply empower it to control most ongoing sources of lead and many contaminated environments. The Agency's recent promulgation of notably deficient -- and long overdue -- regulations on lead in drinking water is a particularly clear example of this unfortunate pattern.

1. Drinking Water and Lead

Lead in drinking water is a ubiquitous source of lead that is contributing to the relatively high average exposures of Americans (as compared, for instance, to Scandinavians or Japanese, whose average blood lead levels appear to be about one-half that of Americans). In some cases, as documented by Dr. John Graef at the hearings of this Subcommittee in April of this year, lead in drinking water by itself can be responsible for lead poisoning. This is particularly so for young infants whose dietary intake may include a great deal of tap-water in the preparation of formula. More generally, lead in drinking water is elevated in over 30 million households, according to EPA. As such, it is a widespread source of exposure for the public at large.

EPA's craven performance in evading the mandate of the 1986 Safe Drinking Water Act amendments with respect to lead demands corrective action by Congress. It appears to be EPA policy to "blame the victim" (otherwise known as regulation via public education) or to construe major environmental problems as being insoluble under current statutory authority. Thus, lead in drinking water is defined by EPA as a problem of, by, and for consumers, with only a minimal role -- or responsibility -- for government and the water industry.

H.R. 2840 adds to the Congressional directives in earlier legislation on this issue in important ways. First, it would define an actual, enforceable drinking water standard for lead at the tap, replacing the ill-defined and entirely unenforceable "action level" concept found in EPA's recent regulations (see 56 Fed. Reg. 26460 (June 7, 1991)). Setting a clear standard reflects the public health philosophy of the Safe Drinking Water Act. It provides the public with an intelligible benchmark against which to evaluate their own drinking water, and a clear health-based target for local agencies and water utilities to meet.

The proposed legislation also provides for a feasible and timely method of implementation, following the amortization model utilized to encourage energy conservation among utilities and the public. It does not depend on "public education", as EPA's deficient regulation does, nor does it condemn us to a choice between wasting water or endangering our children's health. The delays built into EPA's regulations would condemn another generation and its children to excessive, avoidable and unnecessary exposures to lead.

2. Lead Paint Hazards

As noted in the proposed legislation, lead paint presents the most intense exposure hazard to young children and their families. According to the US Department of Housing and Urban Development, about 57 million residences contain some lead-painted surfaces. Of these, 3.8 million private residences present an immediate hazard because of high levels of lead in dust. Many more now present a somewhat lower risk, while others will pose minimal risk as long as the currently intact paint surfaces remain in good condition.

The trouble is that sooner or later virtually all homes are either renovated -- which almost inevitably involves disturbing painted surfaces -- or become deteriorated. A house that today poses no current risk may cause severe lead poisoning next month, after its owners decide to go ahead with remodeling the kitchen, or the bath, or some other areas. Or it may come to present a hazard in five, ten, twenty, or fifty years, when the forces of time take their toll; the lead that is present today will still be every bit as toxic then.

For homes that already pose a hazard, it is unconscionable not to take every available step to identify and disclose the hazard so it can be dealt with. For other residences, we must ensure that residents have the knowledge they need to hold in abeyance the potential hazard posed by intact paint -- by not letting lead-painted surfaces deteriorate and by hiring competent professionals to conduct abatements when the time for renovation comes.

At present, in many cities, local regulations and practice allow hazardous homes to be recycled onto the housing market as long as the particular poisoned child is removed from the premises. The net effect of these policies is to increase homelessness, decrease the availability of low-income housing, and continue the presence of lead paint hazards. Property owners in Baltimore have identified all these problems in current lead poisoning "prevention" programs.

Dr. Julian Chisolm of Johns Hopkins University has written of "killer houses", where child after child has been poisoned without action taken to abate the hazard effectively and permanently. New owners have bought such houses and, without information, have proceeded to renovate them, often -- tragically -- during the period in which they start their families. Several cases of "yuppie lead poisoning", or the poisoning of urban homesteaders and renovators, have been reported.

We must recognize that lead paint will probably continue to be present in at least some American residences for the rest of the lives of most of us present in this hearing room today. We must create laws and regulations reflecting that knowledge.

Section 2803 of H.R. 2840 does precisely this, by requiring that residences be inspected and the results disclosed at the time of sale or lease. We strongly support these objectives, and believe that the section's mechanism is an appropriate one. We remain concerned, however, about two points: first, the fact that nothing at all happens until and unless the Secretary issues regulations governing notification and inspection, and second, the relatively long phase-in for the effective date of the regulations. As to the former, the executive branch has shown itself all too willing to ignore statutory deadlines, and there is no particular reason to anticipate a different outcome here. As to the latter, we recognize that adequate time must be provided for the nascent lead-inspection industry to develop.

Accordingly, we recommend that hammer provisions be included in the legislation and that buyers/tenants be notified of potential lead hazards until the inspection/disclosure requirements take effect. Specifically, at the least, the bill should include default language for a "Notice of Potential Lead Hazard" form. Such a form could recite the fact that most homes constructed before 1980 contain lead-based paint, and that such paint may pose a significant health hazard if disturbed. The form would have to be given out -- and its receipt acknowledged in writing -- for all pre-1980 homes that had not previously been inspected and certified as lead-free. It might also be desirable to have different language for homes built, for example, prior to 1950 and those between 1950 and 1980, in order to reflect the likely differences in lead content of paint manufactured at various times. We would welcome an opportunity to work with the Committee in developing language for such a form and for other hammer provisions.

We recognize that such measures may have some effects on certain real-estate transactions, particularly while the inspection industry is developing. Unfortunately, though, the lead paint is there today, and ignorance is not bliss. Plainly, disruption to real-estate transactions is preferable to disruption of children's intellectual potential, on both economic and moral grounds.

3. Education

We applaud the inclusion of a mandate for public education (section 2804). Much of the success of the proposed legislation, and of environmental health promotion in general, depends upon adequate education and training of the general public, as well as medical practitioners.

We suggest that the Committee specify a role for ATSDR in this process, particularly with regard to materials for professional use in light of the Agency's proven record in developing effective training materials on lead. In this process, ATSDR should utilize its peer review system to ensure accuracy and effectiveness of these materials.

4. Protection of Children in Schools and Day Care Centers

To ensure the well-being of children, it is important to extend vigilance to prevent lead poisoning in these places where children go to develop their brains. Children have been poisoned at day care centers, many of which are in older buildings, such as churches, where lead paint may be present. Existing federal programs are nonexistent and state oversight is poor.

We support the requirement for inspection and disclosure of lead hazards in such locations, and the authorization of funds for that purpose (section 2821). The Committee should consider adding family shelters and pediatric health facilities to the scope of this provision.

We also believe that, because information provides no immunity to lead's toxic effects, abatement of such hazards should be the ultimate goal. This is already required under the provisions of the newly revised Rhode Island Lead Poisoning Prevention Act, which mandates inspection and certification of child care facilities as lead-safe beginning in 1994. As noted in the final section of this testimony, important legislation co-sponsored by the Chair of this Committee would provide resources for abatement of child care facilities.

5. Training and Certification of Workers

With growing public concern over lead hazards, there is a parallel growth in the new industry of lead hazard abatement. H.R. 2840 correctly recognizes that this industry requires regulation to avoid the scandals associated with an under-regulated asbestos abatement industry. We support the provisions requiring worker training and contractor certification for both inspectors and abatement workers. A national standard of practice would ensure consumer protection as well as worker safety and appropriate waste management. We encourage the Committee to require the Secretary, in developing such regulations, to consult with NIOSH and NIEHS, taking advantage of their expertise gained in developing programs in hazardous waste abatement worker training.

We also suggest that the Committee seriously consider including provisions that ultimately require use of certified/trained workers, after an appropriate phase-in period. As written, the bill establishes accreditation programs, but fails to forbid the use of untrained workers. Disaster upon disaster has already resulted from use of untrained workers, who can of course perform abatements more cheaply -- in both senses -- than properly trained and equipped personnel.

Absent a requirement for use of certified workers, short-term economic incentives will tend to push property owners in the direction of unqualified workers able to offer lower rates. Such abatements may endanger not only the property owner and his/her family, but also the neighbors. Obviously, provisions requiring use of trained workers would have to be carefully crafted. We would be happy to work with the Committee in exploring various options.

6. Lead in Food

The presence of lead in food represents perhaps the most egregious continuing source of lead exposure in the US today. It is egregious because it is known, it is currently unavoidable by individual consumers, and it is easily preventable. Lead contaminates food from three sources: contaminated environments in which food is grown and processed; contaminated water used in processing; and lead used in packaging and serving vessels.

We support the bill's provisions banning sale of lead-soldered cans and lead-contaminated food, and requiring additional regulation of lead in ceramic and crystal ware. As to the latter, we again would strongly urge inclusion of hammer provisions, given FDA's record of inertia on this topic. We also urge the Committee to require that FDA examine regulations based on total lead content, as opposed to leachability. Recent findings on the long-term leaching behavior of lead from crystal raise grave doubts as to the accuracy and implementability of leaching-based tests.

We also encourage the Committee to add provisions addressing other uses of lead in food packaging, such as lead foils on beverage containers and lead-based printing inks on food wrappers. We would be happy to supply additional background materials on these uses upon request. Such uses of lead not only contribute to lead content in food, but also burden the waste disposal system and contributes to the high levels of lead in incinerator ash from municipal waste incinerators. In none of these uses is lead essential. This is an instance where source control, in terms of bans on production, importation, and sale, would be far more effective than bans on use.

7. Screening

The front line of prevention in public health is early identification and intervention. With a disease of the magnitude of lead poisoning, universal screening is necessary to detect all cases in time to prevent irreversible toxicity. The CDC in the 1970s developed an exemplary program, with the states, to support and advise lead screening programs. These programs were stifled during the first Reagan Administration by defunding and block granting maneuvers, but were restored to a limited degree by the original version of the Lead Contamination and Control Act as enacted in 1988.

We strongly endorse the extension of the screening program. Indeed, CDC should be adequately funded to revive and extend screening programs for all Americans. To accomplish this crucial goal, we encourage the Subcommittee to increase the authorization for these activities to a minimum of $150 million annually.

8. Additional Reports

Finally, we believe that the Committee should include two additional provisions on information-related topics. First, The Committee should require updating of the ATSDR Report to Congress. As noted above, the 1988 report was a monumental review of the information available on exposures, sources, and health effects of lead in US children. To keep that information current, Congress should mandate biennial reports from ATSDR until such time as the incidence of unacceptable lead exposures falls below 0.1% of children under 5 years of age. ATSDR should also be directed to monitor the impacts of lead control legislation and regulations, and to evaluate the cost effectiveness of intervention programs.

A second addition should address lead's role as one of the global contaminants of this planet. The many dispersive uses of lead have resulted in approximately a thousand-fold contamination of the biosphere, according to research by Patterson and Nriagu. To date, the US has done little to contribute to the global management of lead. US companies still make tetraethyllead for export and use as a gasoline additive; similarly, lead batteries from the US end up in the Caribbean and Mexico for disposal or "recycling" under extremely dangerous conditions, as documented by CDC.

Congress should require EPA to prepare a global inventory on lead uses, and on the entrance and fate of lead releases into the environment, including their impact on US lead exposures and on world environmental health. Such a document should detail the steps that EPA intends to take to reduce US use of lead and export of lead products.

Further Actions Required to Reduce Lead Poisoning

While these actions are not within the scope of H.R. 2840, they deserve mention as part of an overall coordinated campaign to eradicate this entirely preventable disease.

1. Institute Serious Lead Abatement and Source Reduction Programs

First and foremost, EDF urges strong Congressional support for H.R. 2922, the Lead-Based Paint Hazard Abatement Act of 1991, introduced last week by Mr. Cardin and co-sponsored by the Chairs of this Subcommittee and of the Select Committee on Children, Youth, and Families. That bill would establish a dedicated Trust Fund for the abatement of priority lead paint hazards in the US. This is a major undertaking of critical importance, and one that will not occur if left to be financed, as it is now, by the states and the private sector with the merest modicum of federal monies.

In order to transform lead abatement into a truly preventive program, considerable dedicated funds are needed. The lead excise proposal will provide desperately needed funding for such a program, on a scale that can make a difference. It will also use market forces to encourage product substitution, source reduction, and enhanced recycling practices.

Both funds for preventive abatement and means of encouraging source reduction are greatly needed to reduce lead poisoning. H.R. 2922 is an innovative and important approach to a major environmental problem. It should be passed as expeditiously as possible.

2. Protect Parents.

As noted above, children are more susceptible than adults to lead neurotoxicity, but sometimes their injuries arise from exposures of their parents, both father and mother. For that reason, effective prevention programs must include programs to reduce exposures of adults as well as children.

In particular, the occupational standard for lead is woefully inadequate. See Silbergeld et al., *The Occupational Lead Standard: A Goal Unachieved, A Process in Need of Repair,* New Solutions Vol. 1, pp. 75-89 (1990). In light of current medical knowledge, it is compellingly obvious that the existing standard does not protect anyone. Moreover, many lead-exposed workers in the construction trades simply are not covered at all. Congress should invite OSHA and NIOSH to testify on their current evaluations of the nature and extent of occupational exposures to lead, and their plans to prevent these exposures from affecting working Americans, persons living close to industrial sources, and the children of workers.

3. Increase Our Knowledge of the Nature and Extent of Lead Toxicity.

While much is known about lead, there continue to be significant gaps in our knowledge of lead toxicity. We need to know more about the effects of lead on pregnancy and fetal development, and on male reproductive function, with a goal of identifying effective means of early identification and intervention to prevent permanent damage expressed in children. We need to know more about the effects of lead in ageing, and the possible role of lead in cognitive disorders of the elderly. NIH and ATSDR should be funded to support extramural research on these issues.

Conclusion

H.R. 2840 takes key steps in furthering progress toward the goal of curtailing unacceptable childhood lead exposures. EDF strongly supports the bill, and commends the Chairman and his co-sponsors for their leadership on this crucial issue. We look forward to working with the Committee in moving the bill to rapid enactment, and to working on related legislation.

Thank you for this opportunity to testify.

Mr. WAXMAN. Dr. Hanson.

STATEMENT OF DOUGLAS M. HANSON

Mr. HANSON. Good morning, Mr. Chairman.

My name is Dr. Douglas Hanson, I am president of WaterTest Corporation of America in Manchester, N.H.

I am pleased to come before you today to share with you some of our findings about lead levels and drinking water in some of your Federal buildings here in Washington, in some of our Nation's schools, day care centers, and also some information about lead levels in our homes across the Nation.

WaterTest is one of the Nation's leading drinking water analysis laboratories and has been actively involved in the lead testing programs for over 8 years. Since enactment of the Lead Contamination Control Act in 1988, we've been actively involved in performing lead in drinking water analysis for public and private schools across the country.

We recently undertook a random sampling of water sources in 12 Federal buildings, office buildings here in Washington, D.C., to determine the relative levels of lead in these buildings. A total of 170 samples were taken at 85 locations, representing a cross-section of the water locations in each building in question.

Two samples were collected at each tap, a first draw sample representing the water that had stood in the pipes overnight, and a flush sample taken after the water had been allowed to run at full rate for a total of 2 minutes.

This is in accordance with the EPA's protocol for lead sampling collection.

The buildings sampled included the Capitol, the three Senate Office Buildings, the three House Office Buildings—including the building in which we are sitting today—House annexes 1 and 2, two Library of Congress buildings, and the Supreme Court.

The results of the study are presented in Table 1 of this document, which you have copies of. Thirty-one percent of the taps had samples with lead levels at or above 10 parts per billion, the standard which is being proposed today in H.R. 2840.

Twenty-one percent of the taps had samples with lead levels at or above 15 parts per billion, which is the action level established by EPA under the Safe Drinking Water Act for public water supply systems.

Eleven percent of the taps had samples with lead levels at or above 20 parts per billion.

In 1989, in a report on lead drinking water in schools, the EPA recommended that any water fountain or outlet that exceeds 20 parts per billion should be "taken out of service immediately."

The two highest samples were taken from water fountains in House annex 2. These had lead levels of 85 and 95 parts per billion, respectively.

It is important to note that analysis of the general water quality parameters in the buildings indicate that the water delivered by the municipal water system to these buildings is, one, relatively hard water, having hardness in the range of 190 to 240; relatively high pH, in the pH range of 7.8 to 8.2, and; a relatively low corrosivity.

These facts are important because in general, water with these characteristics would not be overly corrosive to plumbing and, therefore, should not cause as much leaching of lead or copper from the plumbing. If the Washington water was more corrosive, the levels of lead in these samples would undoubtedly be much higher.

Mr. Chairman, there are two other areas I'd like to address briefly.

We have been actively involved in assisting school systems around the country with their lead testing programs. Since 1988, a number of States such as New York, Michigan, Illinois, Pennsylvania and Florida have had active programs attempting to address the issue of lead in school drinking waters.

For the most part, these programs have been undertaken in States where there is a well organized statewide program for health and safety in the schools. Over the past 6 to 12 months these programs have slowed greatly the pace of their activities. This, we believe, is largely due to budget constraints in these economic times and the fact that Federal funds to assist the States which were promised under the 1988 act did not materialize.

Unfortunately, the health risk to our young children from lead exposure does not decrease during economic tough times.

In the testing that we have performed since 1988 there have been relatively few day care centers or preschools unless these were kindergartens which were run as a part of the public school system, K through 12. No pressure has been brought to bear on private preschool and day care operators to comply with the 1988 act.

In many cases, these individuals may simply not be aware of the requirement. This is particularly tragic since the children attending these schools, the under 6-year-old group, are the children who are most likely to suffer the adverse consequences of low level lead exposure, whether it be from drinking water or from paint.

It has been argued by some that lead screening programs of schools is going to be too expensive or that there is simply not enough laboratory capacity out there to handle it. These things are simply not true. A typical day care or preschool center with 15 to 30 children would probably require analysis of between one and three samples at a cost of approximately $25 a sample. At a total cost of $75 per school, that works out to be about $2.50 to $5 per child.

As a parent of four children, I think that most parents would find that is a relatively small price to pay to ensure the health and safety of their children.

There are a number of commercial laboratories around the country which are capable of processing and analyzing large numbers of lead samples on a daily basis. This should provide ample capacity to meet the needs of testing programs implemented under the proposed 1991 act.

Finally, I'd like to address one other area of great concern to us, and that's lead levels in private homes which are on private wells.

While I realize that EPA's mandate under the Safe Drinking Water Act is to protect municipal public water systems, there are approximately 13 million families who draw their water from private well sources that are not regulated by Federal or State programs. These individuals are virtually on their own when it comes to questions regarding water quality. There is no Agency to which they can turn for help.

Since lead is largely an inhouse plumbing problem, these individuals are virtually unprotected unless some Federal standard is established for lead.

Over the past 8 years, we have analyzed tens of thousands of homes on private wells in essentially every State across the country. The lead problem is real and in some cases it is very serious for these homes on private wells.

I would urge Congress and the EPA not to forget these families, and particularly the millions of young children in these families, when considering the lead exposure issues.

Mr. **Waxman**. Thank you very much, Dr. Hanson.

Mr. Hanson, I want to thank you for our testimony and also thank you for undertaking the sampling of the water taps in the Capitol. I think you've done us a great service by revealing the risks in our water. And I'm, quite frankly, alarmed at the results.

EPA has said that a water fountain or faucet with lead levels above 20 parts per billion should be removed or replaced immediately. You found nine sites with lead levels over 20 parts per billion.

EPA recommends that other actions, such as flushing the faucets and replacing lead plumbing be taken when lead levels exceed 15 parts per billion, yet, you found 15 sites with lead levels over 15 parts per billion.

The results clearly indicate that we have excessive levels of lead in our water. This should be of concern to every person who works here on Capitol Hill. In one case, the lead levels were found to be 95 parts per billion, and another, 80 parts per billion—many times over an acceptable level.

This is a concern not only for those people's who work on Capitol Hill, but this is not an unusual situation. I notice that the last edition of U.S. News & World Report says, "Is your water safe?" Just following the cover story by Newsweek on the very same subject about lead.

There's a great deal of public concern. Is there a reason for all this public concern?

Mr. **Hanson**. We feel that certainly there is a very great concern for lead exposure, particularly again to young children. The water, while it may represent only 20 to 30 percent of the body burden, it is something that children are exposed to every day—in their homes and how they go to a day care center or they go to a preschool, they are continuing to be exposed to lead in the water.

We also cook our food in that water. We take showers in it. We're exposed to water in many other ways than simply taking a glass from the tap.

Mr. **Waxman**. Let me ask Dr. Silbergeld, if I might: You've heard the results here on Capitol Hill, what do you think is the significance of these results and what advice would you give to people working on Capitol Hill?

Ms. **Silbergeld**. I think they reflect the problems in the Nation, and I'm very appreciative that you and this committee are not taking a selective view of only focusing on, for instance, the Vice President's house by extending your concern to the rest of us. And on behalf of the rest of us, I'm grateful.

I'd like to emphasize that these kinds of levels present, first off, an unavoidable exposure. There's no buffer between the concentrations of lead in drinking water and people's exposure, because people are drinking that water, and they know that lead that is ingested, either in food or water, presents a very immediate hazard in terms of the absorption and delivery.

I'd also like to stress that these are real risks to adults as well as children. There is very real and understandable concern about childhood lead poisoning, but we must not forget that lead is also toxic to adults. Certainly we need some very critical research.

In my testimony I call for consideration by NIH, particularly NIEHS, of the need to fund research on neglected areas of lead toxicity, specifically, male and female mediated effects on reproduction and development, that is, of the father and mother; and also the long-term consequences of lead on aging and potential role in dementia.

So that I think these are very real risks for the adults in these buildings as well, sir.

Mr. **Waxman**. These tests here on Capitol Hill show us how pervasive lead is. The congressional buildings are not an exception, they're the rule. The exposures we find here are likely to be found in millions of homes and offices all around the country, and the risks are likely to be compounded by other exposures, such as lead paint or lead in soils.

Dr. Needleman, can you address the overall magnitude of lead poisoning? How pervasive is this problem? How greatly should we be concerned, and how urgently should we act?

Mr. **Needleman**. The Agency for Toxic Substances issued a historic document a couple of years ago which did some very good epidemiology on the prevalences of lead exposure in American children. And 17 percent of all American children had blood leads over 15 at that time.

For white families with incomes well above the poverty level was 7 percent. So 1 out of 14 privileged white children had an elevated blood lead. You can't compare that to any other disease. We were very upset, justifiably, about measles, but that may be 1 in 10,000 children in America right now.

For poor families, poor whites, it went from 7 percent to 25 percent; and for poor blacks it was 55 percent. We're talking about 3 to 4 million American children are at risk for brain damage due to lead exposure.

Mr. **Waxman**. And you see this problem of lead in drinking water as a real one that we need to address as well as lead from other exposures?

Mr. **Needleman**. Yes, I do.

Mr. **Waxman**. Thank you.

Mr. Hastert.

Mr. **Hastert**. Thank you, Mr. Chairman.

Dr. Hanson, I was certainly interested to read your assessment and then listen to your testimony this morning about the quality of the water delivered to Capitol Hill by the District of Columbia Water Utility.

You said it's relatively hard water with a high pH, I believe you said, and low corrosive ability.

That's correct?

Mr. HANSON. Yes.

Mr. HASTERT. In your opinion—and I don't know if you're an expert on this—but does the city of Washington, D.C., or the water utility of Washington, D.C., does it put anticorrosive materials in the water? Does it treat it?

Mr. HANSON. I'm not sure. I would assume from the data that we obtained from the 12 buildings that were run, that they do do corrosive treatment. That being the case, then these numbers would not improve with any additional corrosive treatment.

Mr. HASTERT. They know, you don't know either.

Mr. HANSON. I'm not sure.

Mr. HASTERT. They may do a better job.

Mr. HANSON. It may be possible to do it better.

One of the problems with corrosivity corrective action is that you can overdo it as well. What you want to do is coat the inside of the pipe so that you are not corroding—not causing leaching—but you don't want too much to be accumulated in the pipe if you can get the other effect as well.

Mr. HASTERT. There's an old term—I guess my old Pennsylvania Dutch grandmother uses, "it wonders me." And this wonders me where the lead in our water is coming from. We checked with the District of Columbia and they told us that there is no significant lead in the source water.

Do you corroborate with that?

Mr. HANSON. Yes. The bulk of the lead in cities that we have looked at across the country comes from the plumbing, either the plumbing in the building from old lead pipes that are in the distribution system in the streets; or in many cases, it's not the main distribution pipe but it's the one that connects it to the building.

Mr. HASTERT. They also told us that there are no lead service lines servicing the Capitol Hill or office building area.

So this suggests that, at least to me, that the lead is coming from inside the buildings, either from lead solder in the plumbing or from lead fittings, or from lead line water coolers; do you agree with that?

Mr. HANSON. Yes.

Mr. HASTERT. Here's the most important question, I guess, for the morning, that the lead in our drinking water is coming from inside the building, and what could the EPA rule or, for that matter, Mr. Waxman's rule, do to reduce this threat?

I think maybe the answer might be not much, since neither the Waxman bill nor the EPA rule requires building owners to fix their plumbing if it's discovered to be the source of lead contamination.

Do you agree?

Mr. HANSON. If it's a building problem, then that's right, it is outside of the scope, I guess, of the EPA, yes.

Mr. **Hastert**. And probably most of the problems—we really need to look at the meat of this thing—most of the problems that we have in this country, even as you mentioned, the 13 million people such as my family, who is on a private well, the source of the lead is not the well, or the source of the water leading into the house to the meter; is that correct?

Mr. **Hanson**. Yes.

Mr. **Hastert**. It's from the meter on to the tap. And, of course, except if the Vice President's house, or HUD housing, or those types of things that are owned by landlords or by a Federal Government, that type of thing—most of that has to be done through education—people taking the time, testing their own water, and then rectifying the problem.

Do you agree?

Mr. **Hanson**. Education is obviously a critical component of it. However, I think you will find—our company has had 8 years of experience dealing with the home owners out there. I think without some Federal push, if you will, people will not get this information on their own; and they are simply unaware of the nature of the health threat to them currently.

Mr. **Hastert**. So any conclusion probably draw from the chairman's survey of water quality on Capitol Hill is that maybe we need to spend a little more time thinking about ways to educate the public about these kinds of risks.

We worry about the EPA's rules for regulating public water utilities—I brought out in our previous hearing that I think the public water utility's responsibility from their well to the meter at the house or at the curb is important. But that's not where the problem is; the problem is from the meter to the tap. We need a better way—just like lead inside homes, and paint—the lead inside waters in pipe need to be addressed by those people who own that property.

Mr. **Hanson**. That's right. It doesn't reduce the health risks to our young children and certainly to the rest of our population, however.

Mr. **Hastert**. So we need to do a little different focus, I would guess.

Thank you.

Mr. **Waxman**. If the gentleman would yield to me.

Mr. **Hastert**. I'd love to yield but my time's up, and you can take it.

Mr. **Waxman**. Without objection, the gentleman will be given 2 additional minutes.

I could respond, and maybe Dr. Silbergeld could respond to this contention that perhaps the problem is just that the consumer doesn't understand what to do and that people should just recognize that most of the problem is in their home and they should take that responsibility.

Can you answer what this bill would do in that regard?

Ms. **Silbergeld**. I would like to.

I think we are approaching a dangerous pattern of blaming victims and exempting government from any role.

First and foremost, it's very important to set a clear standard and not to establish the mush that one has to wade through in

EPA's regulations under the Safe Drinking Water Act. It is very critical to have a health base standard and this bill does that.

No. 2, we've never believed that notion that the responsibility of utilities ends at the street, sir. With all due respect, if you look at the major strides that have been done in this country in energy conservation, it has been an integrated approach, accompanied by rules and regulations from the Consumer Product Safety Commission, among other Agencies, encouraging and stipulating energy conservation for home appliances, coupled with amortization programs, sponsored by the private sector, which has greatly enhanced energy conservation, for example, in Colorado and the State of California.

Mr. **Waxman**. Dr. Silbergeld, in other words—before we get off too much on energy conservation——

Ms. **Silbergeld**. No, it's the same model that you've——

Mr. **Waxman**. But the water utility——

Mr. **Hastert**. It's my time, and if I may reclaim my time—you granted me 2 minutes, didn't you?—which is almost up, probably.

Mr. **Waxman**. It's your time.

Mr. **Hastert**. I understand about energy conservation. I was one of the leaders in the State of Illinois on energy conservation.

But we're saying when a problem and it's not the municipalities, they deliver a clean product, that we need to test. I understand we need to test. I understand the need for standards. We need to have the understanding of what the problem is. So you don't have to lecture me on that.

I say that we need to put in the ability for people to understand what their risk is in their homes and then the ability to solve that problem. But to have the debate going back and forth and saying that the municipality or the water service is responsibility for the eternity in this thing, or the whole universe on this thing, I think there's a flaw there.

Mr. **Waxman**. Will the gentleman yield?

Mr. **Hastert**. If you will allow me 1 more minute.

I think people have to be responsible. I think that people who own properties have to be responsible, including the Federal Government. And that the education of those people and the demand and the whole energy conservation thing that you wanted to get into is because people demand it—it must be done. And that's where we have to get to.

And to say that we have to put the burden on a municipal water project or company to take it from the meter to the tap, you're beyond their ability to do that.

Mr. **Waxman**. If the gentleman would permit; the point I wanted to make—and perhaps I should have made it very clearly—what we have required in this bill is that the water system have responsibility for testing and sampling of homes to identify lead levels so that home owners will know whether their water exceeds a safe level of lead from the pipe. That will give the home owner the option to do some things.

One corrective measure might well be what we're going to do in my office right now and that's drink out of bottled water, and not use the tap water. It may well mean that the home owner will replace the pipes and take corrective action. But home owners are not going to take corrective action unless they know what the problem is, and so we want that done.

The water systems can also do some things in terms of corrosiveness of the water which will prevent the lead from leaching into their water in the homes.

No one is requiring the water systems to protect the home owner all the way through if the problem is in the home. But what we want to do is get the information to the consumers so corrective action can be taken.

Mr. **Hastert**. I don't disagree with that.

Mr. Chairman, if you'd yield?

Mr. **Waxman**. Certainly.

Mr. **Hastert**. I don't disagree with that. And I think that was probably some of the debate we had before: who has that responsibility? I think we ought to test; people ought to know; they ought to be educated. And I think that is something that we do have an agreement on—that maybe we're arguing about something that we agree on.

Mr. **Waxman**. I guess I'm reacting to your statement that the bill does nothing, because it doesn't require anything to be done in the home. I think the bill does something when the consumers get the information which will allow them to take the action needed.

Mr. **Hastert**. I think you heard me say that. I think education is No. 1, and information is part of that.

Mr. **Waxman**. And perhaps we should have a basis for working together on that.

Mr. **Hastert**. We always have a basis to work together.

Mr. **Waxman**. Certainly. Now that you and I have agreed, we've taken Mr. Sikorski's time. I'm sorry, Mr. Sikorski.

Mr. **Sikorski**. You haven't taken my time yet.

Mr. **Waxman**. The gentleman is now recognized for his question period.

Mr. **Sikorski**. Thank you, Mr. Chairman.

I think it is important that the gentleman from Illinois' comments about the responsibility of the water utilities and the responsibility of the home owners and the need for public education are not assumed to be lodged against H.R. 2840.

I agree. I think Henry agrees with the idea that the utilities that supply the water are responsible for what they can control and not more, except there should be some public education being done as they educate on public water supplies generally. And I think that's agreed to.

Second, inside the home, or once it leaves the public water system, the home owner, the property owner, has that responsibility. That's exactly what's embraced in H.R. 2840.

If the public utility has corrosive water, and it contributes to a lead problem, they have responsibility to change that. That's what you said; that's what's in H.R. 2840.

If the water utility has distribution lines that are leaded and they contribute to a health problem at the other end of the line, they have responsibility to take care of that. That's what you said; that's what is here.

And public education should be done on lead and drinking water as well as other threats in the water supply; and they have a responsibility there under the Safe Drinking Water Act, and that's embraced here under this proposal. Nothing more.

Then once it gets into the property owners, that's the property owner's responsibility. That's what's embraced in H.R. 2840.

So let's get it clear that the kinds of discussions that went on from the gentleman from Illinois are not arguments lodged against H.R. 2840.

Let me ask a question about ABC's Primetime show last night on lead and soil. You've got a situation where there's massive amounts of lead soil. You've got lead-poisoned kids. And the only major source, apparent source, these kids, toxicity is from lead in the soil.

Would you address that, Dr. Needleman?

Mr. **Needleman**. Certainly.

Mr. **Sikorski**. And apparently the source of this is the gasoline that we used to be——

Mr. **Needleman**. We put out many millions of tons of lead in the atmosphere when we had lead in gasoline and it resides in the soil.

Mr. **Sikorski**. In areas where the soil lead levels are 2,000 parts per million; that's a hazard, if children are playing there.

Many of the places where these roadside super highways go by are not accessible to children. Lead in the soil is a danger; it is not of the same magnitude as lead in paint.

There are three or four EPA sponsored studies—a couple of them high quality—measuring the actual contribution of soil lead around the a residence to the body burden of children. The one in Boston is a first rate one; I served as an adviser to them. And there is a relationship between the amount of lead in soil and the amount of lead in the children residing in those houses. But it's a small contribution. It is dwarfed by the contribution of lead in paint.

Now in circumstances where a nursery school has been built next to a super highway or a smelter site, that is a hazard. Did you see the report last night?

Mr. **Needleman**. Yes.

Mr. **Sikorski**. We're talking about front yards, back yards; not next to super highways—well, next to super highways as I hear you saying "next to super highways"—two blocks away from super highways. And not next to smelters; but with concentrations as if they were next to smelters.

Mr. **Needleman**. I think lead in soil is a hazard. It is not on the same magnitude—excuse me for repeating myself.

Mr. **Sikorski**. I understand that. The point being here is you need a comprehensive approach to the problem.

Mr. **Needleman**. Exactly.

Mr. **Sikorski**. You need to test the kids. You need to test water. You need to test paint, paint dust. And you need to test soil. Probably in the order of what's likely to be the problem. Once you get someone tested, or you get a house tested as it changes hands, you're going to be able to go in the directions that you're more likely. And you say, in most cases it will be leaded paint, it'll be leaded water, and leaded soil, in that order, I guess.

Dr. Silbergeld, any comments on this soil? Did you see the piece last night?

Ms. **Silbergeld**. Much of the lead in soil also comes from paint, and it's very important not to try and necessarily separate them. As you've stated and the chairman stated, the hazard is lead—it adds up from all sources and presents as a cumulative chronic problem to children and to adults.

We need to avoid fragmenting the problem. And one of the benefits of this proposed legislation is that it takes an integrated approach. I would hope that EPA could have done that themselves but apparently they need your inspiration—inspiration to work and to even conceptualize the problem in its appropriate dimension.

Mr. **Sikorski**. They need more than inspiration.

Ms. **Silbergeld**. Forceful inspiration.

Mr. **Sikorski**. Thank you.

Just to underscore that point, a couple of days ago my staff was touring a community health center in Minneapolis and right in the pediatric waiting room for blood level testing and old Halsey Taylor water cooler. And they were the ones that sparked the Navy, and then the EPA, and then us, to get moving 4 years ago on the water issue.

I'll bet you a lot of money that that Halsey Taylor cooler which stands a great chance of having a lead line tank in it, hasn't been tested. And it underscores the need—the pervasive, continuing poisoning. Even if you get a kid that's not been poisoned, lead level check, they might walk out and take a drink out of a lead line cooler, a water fountain, and go play in a yard and chew some paint, or get a couple of granules on their fingers.

Another point should be made. You're talking about one or two little granules like granules of sugar is enough to send blood lead levels real high. Right, Dr. Needleman?

Mr. **Needleman**. Yes, if lead paint has 50 percent, and there are samples like that—that's 50,000 parts per million—excuse me, 500,000 parts per million. It doesn't take a lot of that to poison a kid.

Mr. **Sikorski**. Like we're talking little granules.

Thank you, Mr. Chairman.

Thank you all.

Mr. **Waxman**. One last question on that just to follow up.

How much water are we talking about that does harm? Somebody goes out and takes a little sip out of the water fountain; is that a problem?

Mr. **Needleman**. No cause for panic, no, indeed. If you drink a liter, a quarter, a day, of water that is 15 parts per billion, you'll get 15 micrograms. That's not a dose you'd like to have, but one glass of water from this building will not poison you—and I've had two today.

Mr. **Sikorski**. Mr. Chairman.

Mr. **Waxman**. Yes.

Mr. **Sikorski**. When you're talking about a baby in a home with infant formula mixed with leaded water, with apple juice, orange juice concentrate that's mixed with leaded water, with macaroni and cheese and vegetables and other things cooked in leaded water, you're talking about cooking up a concentration that gets you pretty close—I didn't want your comment to be embraced by parents to mean that they shouldn't take some action.

Mr. **Needleman**. Absolutely.

Mr. **Sikorski**. Okay.

Mr. **Needleman**. Absolutely. In formula preparation, the use of hot water in formula preparation has caused frank brain damage in children. There are cases reported in that.

Mr. **Waxman**. Thank you very much. I want to thank the three of you for your testimony.

I've written a letter to George M. White, Architect of the Capitol, enclosing the results of the survey that Dr. Hanson submitted to us, asking that actions be taken, and without objection, I'd like to insert it into the record.

Thank you so much.

[The letter follows:]

ONE HUNDRED SECOND CONGRESS

HENRY A. WAXMAN, CALIFORNIA, CHAIRMAN

GERRY SIKORSKI, MINNESOTA
TERRY L. BRUCE, ILLINOIS
J. ROY ROWLAND, GEORGIA
EDOLPHUS TOWNS, NEW YORK
GERRY E. STUDDS, MASSACHUSETTS
PETER H. KOSTMAYER, PENNSYLVANIA
JAMES H. SCHEUER, NEW YORK
MIKE SYNAR, OKLAHOMA
RON WYDEN, OREGON
RALPH M. HALL, TEXAS
BILL RICHARDSON, NEW MEXICO
JOHN BRYANT, TEXAS
JOHN D. DINGELL, MICHIGAN
(EX OFFICIO)

WILLIAM E. DANNEMEYER, CALIFORNIA
THOMAS J. BLILEY, JR., VIRGINIA
JACK FIELDS, TEXAS
MICHAEL BILIRAKIS, FLORIDA
ALEX McMILLAN, NORTH CAROLINA
J. DENNIS HASTERT, ILLINOIS
CLYDE C. HOLLOWAY, LOUISIANA
NORMAN F. LENT, NEW YORK
(EX OFFICIO)

KAREN NELSON, STAFF DIRECTOR

U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON ENERGY AND COMMERCE

SUBCOMMITTEE ON HEALTH AND THE ENVIRONMENT

2415 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
PHONE (202) 226-4952

July 26, 1991

George M. White
Architect of the Capitol
Room SB-15, The Capitol
Washington, D.C.

Dear Mr. White:

As you know, on July 15, 16, and 17, 1991, my staff and the staff of Congressman Gerry Sikorski, Senator Lautenberg, and the Congressional Research Service tested water sources on Capitol Hill for lead levels. I want to thank you and your staff for your cooperation in facilitating the testing.

I am enclosing the results of the testing. The testing shows that certain drinking water fountains and faucets in several buildings have elevated lead levels. Twenty-one percent of the outlets had lead levels at or above 15 ppb, which is the level at which EPA recommends action to reduce lead levels. Eleven percent of the outlets had lead levels at or above 20 ppb, which is the level at which EPA recommended immediate removal or replacement of the outlet in a 1989 report on lead in school drinking water.

I know that you will do all that you can to eliminate sources of lead contamination in the Capitol complex. In that regard, I urge you to take follow-up tests to obtain a more thorough evaluation of lead in the Capitol system, extending beyond those tested in our survey. In the meantime, I urge you to take prompt action to halt the use of the outlets with reported lead levels above 20 ppb.

If you have any questions about the test results, please contact me or Greg Wetstone or Phil Barnett of my staff at 226-7620.

With every good wish, I am

Sincerely,

Henry A. Waxman

HENRY A. WAXMAN
Chairman, Subcommittee on
Health and the Environment

WaterTest
CORPORATION OF AMERICA

SAMPLE #	BUILDING	LOCATION	TYPE	FIRST DRAW (PPB)	FLUSH (PPB)
155128	HOUSE ANNEX I	RM 120 MENS ROM	FAUCET	9	4
155129	HOUSE ANNEX 1	RM 512 BATHROOM	FAUCET	9	4
155121	HOUSE ANNEX I	RM 814	FAUCET	7	4
155101	HOUSE ANNEX I	RM 309 BATHROOM	FAUCET	5	4
155104	HOUSE ANNEX I	RM 405	FAUCET	5	5
155103	HOUSE ANNEX I	RM 105 1ST FL	COOLER	4	3
155130	HOUSE ANNEX 1	RM 512	COOLER	3	4
155139	HOUSE ANNEX II	6TH FL OUTSIDE H2-678	COOLER	95	9
155114	HOUSE ANNEX II	4TH FL OUTSIDE H2-481	COOLER	80	7
155099	HOUSE ANNEX II	4TH FL OUTSIDE H2-474	FAUCET	44	5
155057	HOUSE ANNEX II	BATHROOM OUTSIDE H2-650	FAUCET	16	4
155105	HOUSE ANNEX II	CAFETERIA, FOOD	COOLER	5	4
155116	HOUSE ANNEX II	CAFETERIA	COOLER	5	5
155096	HOUSE ANNEX II	CAFETERIA	FAUCET	3	3
155066	DIRKSEN SOB	RM 618	COOLER	16	8
155070	DIRKSEN SOB	RM 320	COOLER	15	6
155055	DIRKSEN SOB	RM 620	COOLER	13	5
155054	DIRKSEN SOB	RM 636	FAUCET	7	4
155074	DIRKSEN SOB	CAFETERIA KITCHEN	FAUCET	5	3
155088	DIRKSEN SOB	RM 19, BASEMENT	FAUCET	5	6
155064	DIRKSEN SOB	RM 682 MENS ROOM	FAUCET	4	3
155072	DIRKSEN SOB	RM 320	FAUCET	3	3
155067	HART SOB	RM 808	FAUCET	29	5
155086	HART SOB	CAFETERIA	FAUCET	11	5
155063	HART SOB	RM 141	FAUCET	5	< 3
155053	HART SOB	RM 141	COOLER	4	3
155060	HART SOB	RM 808	COOLER	4	3
155065	HART SOB	RM 530	COOLER	4	4
155073	HART SOB	RM 506	FAUCET	4	5
155075	RUSSELL SOB	4TH FL WOMENS ROOM	FAUCET	25	5
155062	RUSSELL SOB	1ST FL WOMENS ROOM	FAUCET	10	4
155050	RUSSELL SOB	3RD FL MENS ROOM	FAUCET	9	4
155082	RUSSELL SOB	3RD FL MENS ROOM	FAUCET	5	4
155083	RUSSELL SOB	ROOM 420	FAUCET	5	3
155069	RUSSELL SOB	CAFETERIA	FAUCET	4	4
155085	RUSSELL SOB	1ST FL MENS ROOM	FAUCET	4	< 3
155142	MADISON LC	RM 633 MENS ROOM	FAUCET	35	< 3
155140	MADISON LC	RM 631 MENS ROOM	FAUCET	9	5
155137	MADISON LC	RM 627 CAFETERIA	COOLER	6	3
155094	MADISON LC	RM 333	FAUCET	5	< 3
155135	MADISON LC	RM 631	COOLER	4	5
155109	MADISON LC	RM 627 CAFETERIA	FAUCET	4	3
155111	MADISON LC	RM G33	COOLER	3	4
155113	MADISON LC	RM 333	COOLER	3	3
155112	JEFFERSON LC	RM 108	COOLER	12	3
155141	JEFFERSON LC	RM 132	COOLER	5	4

WaterTest
CORPORATION OF AMERICA

TABLE 1: DRINKING WATER ANALYSIS FOR LEAD IN FEDERAL BUILDINGS IN WASHINGTON, DC

SAMPLE #	BUILDING	LOCATION	TYPE	FIRST DRAW (PPB)	FLUSH (PPB)
155087	CAPITOL	1ST FL. MAIN HALL, E.	FAUCET	9	8
155084	CAPITOL	HOUSE COFFEE SHOP	FAUCET	7	4
155078	CAPITOL	RM 138	FAUCET	6	3
155043	CAPITOL	KITCHEN	FAUCET	5	4
155080	CAPITOL	2ND FL, E. MEMB. BATH	FAUCET	5	5
155083	CAPITOL	E. MEMBER KITCHEN	FAUCET	4	4
155090	CAPITOL	3RD FL. SENATE SIDE	FAUCET	4	4
155092	CAPITOL	ROOM S 135	FAUCET	4	< 3
155133	CAPITOL	BASEMENT TUNNEL	FAUCET	3	4
155119	SUPREME COURT	JUSTICES BENCH	COOLER	11	23
155138	SUPREME COURT	TOP FLOOR GYM	COOLER	7	8
155046	SUPREME COURT	2ND FLOOR	FAUCET	4	1
155118	SUPREME COURT	BASEMENT	FAUCET	3	3
155134	RAYBURN HOB	4TH FL SE (RM 2434)	COOLER	32	12
155098	RAYBURN HOB	4TH FL NW LADIES RM	FAUCET	25	3
155120	RAYBURN HOB	RM 2418 MEMBERS BATH	FAUCET	15	3
155045	RAYBURN HOB	CAFETERIA	COOLER	11	4
155093	RAYBURN HOB	RM 2418 KITCHEN	FAUCET	9	4
155100	RAYBURN HOB	3RD FL NE CORNER	COOLER	7	5
155095	RAYBURN HOB	1ST FL NW CORNER	COOLER	7	5
155086	RAYBURN HOB	CAFETERIA	FAUCET	6	3
155097	RAYBURN HOB	BATHROOM 3RD FL	FAUCET	6	4
155117	RAYBURN HOB	1ST FL SE	FAUCET	3	< 3
155124	LONGWORTH HOB	RM 1526 LADIES RM	FAUCET	19	4
155123	LONGWORTH HOB	RM 1723 7TH FL MENS	FAUCET	18	4
155126	LONGWORTH HOB	RM 1740 7TH FL MENS	FAUCET	17	4
155122	LONGWORTH HOB	RM 1104 MENS ROOM	FAUCET	16	4
155136	LONGWORTH HOB	1ST FL MENS	FAUCET	13	4
155137	LONGWORTH HOB	RM 1440 MENS ROOM	FAUCET	12	4
155103	LONGWORTH HOB	RM 1807	FAUCET	6	4
155125	LONGWORTH HOB	RM B208	FAUCET	5	4
155044	LONGWORTH HOB	CAFETERIA	COOLER	4	4
155061	LONGWORTH HOB	CAFETERIA	FAUCET	4	3
155047	LONGWORTH HOB	CAFETERIA	FAUCET	3	4
155048	CANNON HOB	5TH FL	COOLER	15	10
155079	CANNON HOB	BASEMENT	COOLER	8	10
155081	CANNON HOB	BASEMENT	FAUCET	6	4
155051	CANNON HOB	5TH FL	FAUCET	5	5
155091	CANNON HOB	ROOM 403	FAUCET	5	5

BEST COPY AVAILABLE

Mr. **Waxman**. I'd like to now call forward the following individuals to testify: Jane Stern, president of Maryland State Teachers Association, on behalf of the National Education Association and the National Parent-Teacher Association; Edward J. Gorman III, executive director, United Brotherhood of Carpenters National Health and Safety Fund; Richard Jones, senior vice president, Management Services, Inc., on behalf of the National Apartment Association, and Dr. Rudolph E. Jackson, professor of pediatrics, Morehouse School of Medicine, on behalf of the Alliance to End Childhood Lead Poisoning.

We want to welcome the four of you to our hearing this morning. Your prepared statements are going to be in the record in full. What we'd like to ask from each of you is to limit the oral presentation to no more than 5 minutes, and we'll have to be pretty strict about that, I'm sorry to say.

Ms. Stern, we'll start with you.

STATEMENTS OF JANE STERN, ON BEHALF OF NATIONAL EDUCATION ASSOCIATION AND THE NATIONAL PARENT-TEACHER ASSOCIATION; EDWARD J. GORMAN III, EXECUTIVE DIRECTOR, UNITED BROTHERHOOD OF CARPENTERS NATIONAL HEALTH AND SAFETY FUND; RICHARD JONES, ON BEHALF OF NATIONAL APARTMENT ASSOCIATION; AND RUDOLPH E. JACKSON, ON BEHALF OF ALLIANCE TO END CHILDHOOD LEAD POISONING

Ms. **Stern**. Thank you, Mr. Chairman, and members of the subcommittee.

I'm Jane Stern, president of the Maryland State Teachers Association. I appreciate the opportunity to speak to you this morning on behalf of the National Education Association and the National Parent-Teacher Association about the Lead Contamination Control Act Amendments.

Lead poisoning is the No. 1 environmental hazard facing children today. Almost one-fifth of all children in America have hazardous levels of lead in their blood. Lead poisoning not only threatens the lives and health of young children, but it is also a serious obstacle to the national education goals and our Nation's educational and economic aspirations.

Lead poisoning is associated with diminished intellectual and physical stature, nerve damage, behavioral problems, and other longlasting health problems.

As a teacher, I know there is nothing we can do which can fully overcome these problems. Because lead exposure is cumulative and because most of the adverse effects of lead poisoning are irreversible, we must devote our attention to prevention of all types of exposure—from drinking water, soil, paint, and other sources.

NEA and PTA strongly support the proposed LCCA Amendments. We are pleased that the subcommittee has incorporated many of the recommendations we made earlier this year, and I would like to take this opportunity to reiterate some of those recommendations and call for a few additional changes.

These proposed amendments would address one of the central deficiencies of the legislation as enacted in 1988 enforcement. Up to now, the Environmental Protection Agency has not had adequate authority to require States or schools to comply with their requirements for testing or abatement.

Moreover, the required action level was far too high to provide adequate protection to children's health.

We appreciate the subcommittee's willingness to include specific requirements that cover both lead in drinking water and lead-based paint hazards, and spell out timelines and procedures for testing and reporting to school employees, parents, and the general public.

Absent testing requirements, too few schools and States have taken steps to identify where problems exist. Still, we believe that when lead hazards do exist, schools should be required to inform the public in accordance with the EPA guidance document. Informing school officials, parents, and the public is essential. And yet, we maintain that advisories and recommendations are insufficient by themselves to assure that schools, in cooperation with the State and municipal officials, take appropriate steps to remedy high levels of lead.

Schools, States, and NEA and PTA have extensive experience in dealing with environmental hazards. The record of asbestos illustrates the need for specific action requirements. Long after it was generally recognized that asbestos was a grave health hazard and even in specific communities where asbestos in the schools was a demonstrated hazard, officials were slow to act.

Until schools were required under Federal law to develop and implement asbestos management plans, and until schools with the most serious problems and fewest resources to address them were provided resources for that purpose, the majority of schools took little or no abatement actions.

We should not repeat the mistakes of the past. This subcommittee has an opportunity to demonstrate leadership in addressing a serious national problem. We urge you to include provisions that require testing, reporting, and action.

Further, we urge you to provide funds to assist schools with these activities. NEA and PTA have joined in recommending a number of other technical amendments which are included in the written prepared statement we have provided.

I urge you to adopt these recommendations in marking up this essential legislation. We appreciate your efforts on behalf of America's children, and both PTA and NEA pledge to assist in enacting strong legislation to eliminate the threat of lead in America's schools.

Thank you.

Mr. **Waxman**. Thank you very much, Ms. Stern.

[Testimony resumes on p. 493.]

[The prepared statement of Ms. Stern follows:]

Statement of
THE NATIONAL EDUCATION ASSOCIATION
and
THE NATIONAL PARENT-TEACHER ASSOCIATION

Good Morning, Mr. Chairman and other members of the Subcommittee. I am Jane Stern, President of the Maryland State Teachers Association (MSTA). I am speaking today in behalf of both the 2 million-member National Education Association and the 7 million-member National Parent-Teacher Association, and I welcome the opportunity to present our views on H.R. 2840, the Lead Contamination Control Act Amendments of 1991.

Introduction

The National Education Association represents more than two million education employees in public elementary, secondary, and vocational schools and institutions of postsecondary education. Our members include teachers, education support staff, higher education faculty, college students, and retired school employees. NEA has long been active in efforts to ensure that schools provide a safe and healthy environment for their students and staff.

The National PTA represents over 7 million parents, teachers, students and other child advocates in all fifty states, the District of Columbia, Europe and the Pacific region where American parents send their children to Department of Defense Dependents Schools. The organization was founded on the premise of parental involvement and has a long-standing policy of protecting the ecological and environmental qualities of life necessary to the development of healthy and productive youth. The National PTA believes that children should be safe from preventable health hazards of any kind, including in the classrooms where they go to learn for three-quarters of each year.

Both the NEA and National PTA have worked extensively with Congress and the Environmental Protection Agency (EPA) to reduce and eliminate environmental hazards in schools. Moreover, in 1989, in cooperation with the EPA and other educational groups, we organized a series of regional workshops around the country to inform parents, teachers, and other school officials about the hazards of asbestos, radon and lead in drinking water. And, through a coalition effort with other educational groups, we worked with EPA in developing a booklet entitled, "Environmental Hazards in Schools", which includes a section on lead in drinking water.

The NEA and the National PTA have testified separately on the issue of lead in drinking water several times, most recently before this Subcommittee this past April. At these appearances, our witnesses presented information about the adverse health effects of lead poisoning in children and referred to research studies, government documents, and audit reports that are well-known to the Members of this Subcommittee. This statement will not repeat what has already been presented, except to reiterate three key facts:

- Lead poisoning is the number one environmental hazard facing children in the United States, threatening them at home, at play, and in their schools;
- The federal government is not responding in a timely or effective manner to an environmental hazard that affects 17 percent of the children in America; and
- There is a clear connection between the health threat of lead exposure and achievement of the National Education Goals developed by the President and the nation's governors. For example, the three to four million children in the United States who have blood lead levels high enough to cause decreased intelligence, behavioral disturbances, developmental delays, and numerous other long-lasting adverse health effects, will not "start school ready to learn." Similarly, we know from Dr. Needleman's research that children who were exposed to high levels of lead when they were young had seven times greater odds of dropping out of high school. If we do not act to prevent additional lead exposure now, we will have difficulty in "increas[ing] the high school graduation rate to at least 90 percent"

At this hearing, we have been asked to comment on H.R. 2840, legislation introduced by Chairman Waxman, Representative Sikorski and others to respond to the problem of childhood lead poisoning. This bill creates new programs, and expands existing ones, all aimed at reducing the incidence of lead poisoning among children. This statement will concentrate on the sections of the bill concerning lead in drinking water and in paint in schools and day care centers.

Overall we strongly support this bill, which would strengthen and improve the Lead Contamination Control Act (LCCA) enacted in 1988. The National PTA and the NEA were strong proponents of the LCCA, but we are disappointed that the law has had such little effect in ameliorating the problems, particularly with drinking water in schools.

Specifically, there were three major problems with the original statute:

1. EPA did not have adequate authority to require states or schools to comply with its provisions;
2. The President never requested, and Congress never appropriated, the funds that were authorized to help states and school districts to comply with the law; and
3. There was great confusion about the level of lead in drinking water that was considered acceptable. While EPA had a proposed regulation that set 20 parts per billion as the standard, the official standard still in place, through April of this year, was 50 parts per billion.

The LCCA provided three years for states and schools to test their drinking water for high levels of lead concentrations. During that time, EPA prepared a helpful guidance document to assist states and schools that tried to comply with the spirit of the law. States, in turn, were supposed to have distributed this document to schools and day care centers.

Unfortunately, because the law was, in effect, voluntary, it did not succeed. The EPA Inspector General's audit report, published in September 1990, and the more recent report on the LCCA published by the Natural Resources Defense Council (NRDC), both demonstrate, quite vividly, the low level of compliance with the law. In its summary, the NRDC found, "On the whole, the nationwide assessment of lead in school drinking water that should have been stimulated by the LCCA has not occurred; instead, the states' attempts to comply have been glaringly inadequate."

The NRDC reported that since the LCCA was enacted, a mere 6 percent of licensed day care centers (0.1% of the total number of licensed and non-licensed day care facilities) were tested in the 17 states that reported testing any day care centers. Forty-seven states reported sampling of school drinking water, but in some of the states, testing was sporadic and incomplete. 33 of the 47 states that conducted some testing actually provided lead level data. Of these, 27 reported that their results exceeded EPA's then-recommended standard of 20 parts per billion.

In my own state of Maryland, the NRDC survey found that 32% of the water coolers tested in one district exceeded the 20 parts per billion level, and that 72% of the coolers containing lead were not on EPA's list of "not-lead-free" coolers. 76 water coolers had lead levels exceeding 100 parts per billion. Only about half of the districts reporting data in the state were in full compliance for testing and remediation of coolers and only about one-quarter of those districts were in compliance for testing water from other sources. Private school and day care center compliance in Maryland averaged only about 10% compliance.

It is evident that the LCCA must be strengthened in order to be effective. In the three years since the law was enacted, a number of other factors have added to the urgent need for a federal response to the problem of lead poisoning in children. For example:

- More research has emerged demonstrating that adverse health effects occur at lower levels of exposure.
- In his April testimony before this Subcommittee, Dr. Vernon Houk, U.S. Assistant Surgeon General, reported that the Centers for Disease Control is preparing to release an update of the 1985 Statement on the Prevention of Lead Poisoning in Young Children. According to Dr. Houk, the new report is expected "to lower the blood lead level of concern from the present 25 micrograms per deciliter to 10-15 micrograms per deciliter and will place an increased emphasis on the need for primary prevention of childhood lead poisoning."
- The federal government has developed a 20-year "Strategic Plan for the Elimination of Childhood Lead Poisoning", involving all levels of government and the private sector in lead poisoning and prevention activities, effective and safe abatement of lead-based paint in housing,

reduction in sources of lead exposure other than lead-based paint, and national screening for elevated blood lead levels.

- Dr. John Rosen, Chairman of the Advisory Committee that is revising CDC's statement on lead poisoning in children also testified before your Subcommittee in April. He reported that the CDC and EPA conducted cost-benefit analyses, finding that "a Congressionally mandated federal effort to eliminate childhood lead exposure from leaded paint and water will yield, conservatively, an annualized benefit of at least $4.2 billion in terms of net medical and societal savings."

This year, as the Subcommittee staff began drafting a bill to reauthorize the LCCA, the NEA and National PTA offered a number of recommendations that we asked be included in the new legislation. We are pleased that most of our suggestions were incorporated in H.R. 2840. We will highlight these points and comment briefly on a few remaining recommendations we have for the bill.

We recommended that there be a specific deadline requirement for schools and day care centers to test their water. Under current law, there is a disincentive for schools to test. If schools test their water, they are required to notify parents, teachers and other school personnel, and presumably, remedy the situation if their lead levels were above the EPA action levels. On the other hand, if schools did not test, they were not required to do anything further.

H.R. 2840 addresses this concern and would require that local education agencies test their drinking water for lead contamination within 18 months of enactment of these amendments.

We recommended that the requirement for schools to report the findings of their tests to parents, teachers, and other school personnel be retained. The notification requirement included in the Act is an important accountability mechanism, particularly since schools do not have to follow specific abatement procedures. It is retained and strengthened in the bill.

In addition, H.R. 2840 would establish a requirement that, within 90 days, schools with test results above 10 parts per billion provide to teachers and parents a summary of the test results, a lead disclosure statement (to be prepared by EPA in consultation with the Centers for Disease Control), a description of the actions the school district plans to take to remedy the situation, and a schedule for when these actions will be implemented. At the same time, this information will be provided to the agency with primary enforcement responsibility for the public water system that serves the school, and in turn to the Environmental Protection Agency.

We support the expanded public availability provisions in H.R. 2840, but recommend that language be added clarifying that the materials schools must prepare, if they have elevated lead levels, be prepared in accordance with the EPA guidance document. We also recommend that this provision be expanded to include language outlined in another section of the bill requiring that this material be presented "to newly hired teachers and other personnel and parents (or guardians) of newly enrolled children for so long as [the hazard] continues to be present in the school or day care center."

We recommended that the bill direct schools to test according to EPA guidelines, and require that if EPA does not issue regulations by the required date, schools must still test, using the protocol outlined in EPA's 1989 document, "Lead in School's Drinking Water". This provision, which is included in the bill, would prevent schools from saying they could not test due to lack of regulations. If EPA does not promulgate regulations in a timely manner, schools will still have guidance on how to test. We also support the added provision in the bill that would direct EPA to revise the guidance document, outlining remedial steps schools can take when their levels of lead concentration exceed 10 parts per billion.

We asked that schools and day care centers be required to test **all** their outlets for lead--including water fountains, coolers, bubblers or faucets used in preparing food--to adequately ensure the safety of the students. The audit report of the LCCA prepared by EPA's Inspector General found that some schools only tested outlets that were suspected to have high levels of lead and thus may have overlooked dangerously high levels at other outlets. Similarly, schools that conducted improper testing may have had misleading results because lead levels are lower after flushing. For example, schools that did not follow procedures for taking "first-draw" samples would post misleading lower lead levels.

H.R. 2840 incorporates this provision and would require testing "for lead in drinking water from coolers, and in other drinking water outlets (including outlets used in food preparation)."

We requested that schools be required to remedy high levels of lead that were found through testing, with provision that they report their findings to the state lead-in-drinking-water designee and in turn, that the state designees report to EPA. Strong follow-up provisions are needed to ensure accountability and proper implementation of the new law. While H.R. 2840 would strengthen the public notification provisions in current law, we believe the bill should also include requirements that schools remedy elevated levels of lead. We recognize some schools may find that high levels of lead are coming from outside sources beyond their jurisdictional control. If this is the case, schools should be required to turn off the water outlets and use bottled water until the source of the lead was found and abated. If the purpose of this bill is to reduce, and eventually eliminate, children's exposure to lead, then we must be clear on what schools need to do if they discover elevated lead levels in their drinking water. H.R. 2840 would set a level for maximum lead concentrations in water, so if those levels are exceeded, they should be remedied.

We suggested that the grant program to assist schools with the costs of testing and remedying high levels of lead in their water be improved. Even if money had been appropriated for the state grant program authorized in current law, there is no guarantee that states would have used the money to assist schools in testing. The existing law creates a grant program to states to assist local education agencies for expenses incurred with the costs of testing for and remedying high levels of lead, but there is no specific criteria about how the money is to be awarded, nor a guarantee that states will use the money to help schools with these costs.

H.R. 2840 would target the appropriated funds to reimburse local education agencies for expenses incurred for testing and remedial action, and base reimbursement on financial need of the LEA and the severity of the drinking water contamination at the schools concerned. We would like to see a provision added here that requires EPA to consult with representatives of educational organizations, including parents, teachers and school administrators, before developing eligibility criteria for this program.

We hope that by directing the grants specifically to help schools test and abate hazardous levels of lead, congressional appropriators will more readily fund the program knowing children's safety is at stake. We also urge members of this Subcommittee to talk to their colleagues on the VA-HUD-Independent Agencies Appropriations Subcommittees to help convince them of the importance of providing funds for this program.

We are concerned, however, that the grants are limited solely for reimbursement for expenses already incurred. There may be schools that do not have the funds to carry out the necessary response actions. Assistance through the grant program should be available to reimburse schools for testing and to assist them in completing remedial action to reduce elevated lead levels in their school drinking water.

We asked that the bill increase EPA's authority to oversee whether states have created programs, and to require that states comply with the other requirements of the LCCA. The IG audit report found that even without stronger authority, EPA could have done more to ensure that drinking in water in schools is free from hazardous lead. Specifically, the report recommends that EPA "perform additional outreach to states and prepare model plans to assist states in formulating their LCCA programs."

The bill would involve EPA more directly in oversight, by requiring that schools transmit materials about their testing and proposed remedial actions to the Administrator, through the agency with primary enforcement responsibility for the water system that serves the schools, and by directing them to prepare, with the CDC, a disclosure statement on lead that will be sent to parents, teachers, etc. as part of the public notification provisions. These added provisions will increase EPA's ability to enforce the law.

We would also ask that a provision be added to the bill requiring EPA to submit an annual report to Congress containing the data schools submitted about testing for lead, the response actions they plan to take, and information about the grant program and how it is administered.

We recommended that the bill impose civil penalties on states and schools for non-compliance. Local education agencies should be assessed penalties for not properly testing for lead in drinking water, and states should be fined for not properly implementing their other responsibilities under the Act. As in the Asbestos Hazard

Emergency Response Act (AHERA), we recommended that any fines collected be used to make grants to schools to help with the testing and clean-up costs.

Current law imposes civil and criminal penalties for violations of the prohibition against the sale and manufacture of water coolers with lead-lined tanks, but not for non-compliance with the testing and notification provisions. H.R. 2840 would add these provisions.

We recommended that the provisions related to water coolers with lead-lined tanks be renewed. For example, there needs to be follow-up to determine if the water coolers manufacturers are complying with the ban on sale of coolers that are not "lead-free," and further delineation of the Consumer Product Safety Commission's (CPSC) responsibilities in carrying out the recall of non-lead-free coolers. EPA has published its list of water coolers that contained lead-lined tanks and were otherwise "not lead-free." However, according to the Inspector General's audit report, EPA "did not aggressively locate and identify additional coolers to place on the list, and did not fully utilize data gathered on the test results of the coolers." One of the negative consequences of EPA's incomplete compliance with this provision is that many schools limited their testing to those coolers on EPA's list, thus avoiding potential hazards in other coolers within their buildings.

The NRDC report said that schools in only 19 states took inventory of water coolers that were not lead free, and the EPA audit report said that schools found lead contamination in coolers that were not on EPA's original list. H.R. 2840 would address these issues by requiring that the EPA update its list of water coolers that are not lead-free and by requiring a re-issue of the CPSC recall order, which to date has been limited to just one manufacturer.

We believe that EPA must be required, in statute, to revise its regulation setting a maximum contaminant level (MCL) for lead measured at the entry point of the water system and at the tap. While this issue is not addressed in the LCCA, but rather the Safe Drinking Water Act that the LCCA amends, we feel strongly enough about EPA's failure to act on this important health issue that this should be addressed in this law.

We support the provisions of H.R. 2840 that would establish a tapwater lead limit of 10 parts per billion and a maximum contaminant level goal of zero parts per billion, as well as the modifications the bill would make to EPA's education and monitoring requirements.

We agree with Chairman Waxman that the EPA has had ample time to develop a standard on its own and has not. A new MCL for lead, mandated by law, is especially welcome in light of the fact that EPA repealed the previous "official" standard of 50 parts per billion, imposing instead a treatment requirement triggered at a lead "action" level exceeding 15 parts per billion. The action level is not enforceable, so the Agency has, in effect, eliminated any real standard.

We believe this is a critical provision in the bill. If there is no defined standard for what lead level is acceptable in drinking water, then schools will have difficulty in complying with a testing requirement. Without a specific measure, they will not know when to initiate remedial action.

We also strongly support the provisions in H.R. 2840 that address the problem of lead paint in schools and day care centers. Lead paint is the major cause of elevated lead levels in children. Exposure occurs when children ingest chips or flakes of lead paint and when they ingest lead-paint contaminated dust or soil. We know that at least 15 percent of all school buildings were constructed before 1939, and another 31 percent were constructed before 1959. It is reasonable to conclude that many of these schools still contain lead-based paint. To assist the young children who are most at-risk of lead poisoning from paint, H.R. 2840 prudently targets buildings constructed before 1980 that are used as elementary schools, Kindergartens or day care centers providing education or day care to children under the age of six. As we did with the drinking water section, we recommend that the grant program language be amended to allow reimbursement for testing activity, but also to provide grants to assist with response actions as well. We also suggest that the authorization for the grant program for testing and abating lead paint hazards begin in FY 1994. Since the bill would give the EPA two years to develop regulations for this program and four years for schools to complete the testing, this amendment would authorize the funding when it is needed.

One problem we see with this bill concerns its applicability to day care centers. The bill would require inspection for lead paint or lead hazards in schools or "day care centers owned or operated by that agency [local education agency] (LEA)." but most day care centers are not run by LEAs. Requirements for testing and abatement should be established to cover all day care centers, not just those run by LEAs. Furthermore, the sections of the bill requiring testing for lead in drinking water do not apply to day care centers, despite the potential hazard that exists in these facilities.

In closing, we extend our strong support for the provisions in the bill that expand community blood lead level screening programs, particularly those targeted to at-risk populations, and the increased authorization ceilings for this purpcse. Likewise, we support the provisions of the bill that address the problem of lead contamination from other sources including food, ceramics and glassware.

We thank you for the opportunity to testify today and we look forward to working with you in enacting strong legislation to eliminate the hazard of lead in our schools and day care centers. I would be happy to answer any questions you might have about our statement.

Mr. WAXMAN. Mr. Gorman.

STATEMENT OF EDWARD J. GORMAN III

Mr. GORMAN. Thank you for your invitation to testify concerning the Lead Contamination Control Act of 1991. I testify today on behalf of the Carpenters National Health and Safety Fund, a joint labor-management trust fund representing members of the carpenters union as well as our union contractors signatory to collective bargaining agreements.

The fund was established in 1990 to address the numerous health and safety problems of workers and their families and to improve the length, quality and productivity of workers' lives.

Mr. Chairman, we agree wholeheartedly with your observation that lead is the most pervasive and insidious environmental threat to America's children today. We also believe that it is nearly as great a threat to American workers, particularly those in the construction industry.

The 600,000 members of the carpenters face lead-based paint hazards both at home and at work, whether from on-the-job exposures which get carried home on our members' clothing, or simply from living in and renovating homes built before 1980.

With the introduction of H.R. 2480, this subcommittee is poised to solve an environmental and occupational health threat which has plagued mankind for over two millennia. We believe your bill goes to the heart of many of the problems associated with lead-based paint and the medical problems associated with exposure to it.

We also believer that this will can become the first truly comprehensive approach eliminating this deadly toxin. For these and other reasons I will discuss, we commend you, Mr. Chairman, for the commitment you have shown to America's children and workers and for the alacrity with which you have moved to craft responsible legislation.

The engine that will drive much of the work needed to eliminate leaded paint, is the inspection requirement prominently featured in the proposed legislation. Time and time again, we found that when the public and workers are permitted to know the hazards they face, they will react in responsible and prudent ways to eliminate them, if given the wherewithal.

As this subcommittee is well aware, the inspection mechanisms guarantees the public and workers the right to know the extent and severity of preventable lead-related injuries to their health. With that knowledge, an owner or lessor assumes the duty of due care, a duty which, if breached, causes liability under common law.

In the case of this legislation, within 2 years after enactment, sellers and lessors of residential premises must arrange for licensed lead inspectors to conduct a lead inspection of the premises and provide a lead hazard inspection report to purchasers or lessees. The 2-year grace period before the effective date of this provision is certainly adequate time for all parties to be put on notice of its requirements. Moreover, as you are aware, the inspection requirement itself has been utilized to great success in the State of Massachusetts.

Similarly, the requirements of strong lead abatement standards will, with minimal refinement, protect the occupants of residences and the workers involved in deleading.

In our view, the bill also is responsible and quite cautious in providing for a report by the implementing Agency on lead inspection and abatement methods and devices within the first year after enactment of this title.

The clear intention of this language is above reproach—the Agency must learn, among others, what the most health-protective, cost-effective and building-modernizing abatement practices are before setting the necessary standards governing owners and contractors in the private sector.

This is an approach Congress failed to fully utilize when asbestos abatement was being considered, to the great detriment of that control industry that developed after the enactment of Asbestos Hazards Emergency Response Act of 1986—otherwise known as AHERA.

Licensing and certification of inspectors, deleaders and laboratories are another strong feature of the bill. We believe that Federal regulators must accredit training providers to train and certify both lead inspectors and deleaders in compliance with lead abatement standards established by this legislation.

The model established by AHERA and subsequent regulations have proven the accreditation/certification approach to be a worthy precedent in establishing strong health protections for the public and for workers.

In addition, the provisions establishing a strong education program upon enactment serve well the public's need to know and lays the necessary groundwork for later inspection and abatements, where applicable.

To touch upon a comment made by Dr. Houk earlier and which you pointed out, again I think that there's simply no excuse for not licensing deleaders and inspectors. Unlicensed workers put the public at great risk of harm from fly-by-night contractors. State-by-State development of these standards shirks the Federal duty to protect the health of all Americans. Caveat emptor simply cannot be the rule that prevails here if innocent children are to be victims.

The administration says it will get done, they say it will get done voluntarily, and I can tell you of at least one example where it has not been done, and that is the exposure of construction workers to lead hazards.

We have known for 20 years now that the only standard that applies to construction workers is well out of date and that general industry has had a lower standard for sometime. We need to move on these things; we need to move quickly.

We commend you and this subcommittee for the actions we hope you'll take.

Mr. **Waxman**. Thank you very much, Mr. Gorman.

[The prepared statement of Mr. Gorman follows:]

PREPARED STATEMENT OF EDWARD J. GORMAN III, EXECUTIVE DIRECTOR, UNITED BROTHERHOOD OF CARPENTERS NATIONAL HEALTH AND SAFETY FUND

Mr. Chairman, fellow Members of the Subcommittee, thank you for your invitation to testify concerning the "Lead Contamination Control Act 1991."

I testify today on behalf of the Carpenters National Health and Safety Fund, a labor-management trust fund representing members of the Carpenters union as well as our union contractors signatory to collective bargaining agreements. The Fund was established in 1990 to address the numerous health and safety problems of workers and their families and to improve the length, quality and productivity of workers' lives.

Mr. Chairman, we agree wholeheartedly with your observation that lead is the most pervasive and insidious environmental threat to America's children today. We also believe that it is nearly as great a threat to American workers, particularly those in the construction industry. The 600,000 members of the UBC face lead-based paint hazards both at work and at home, whether from on-the-job exposures which get carried home on our members' clothing, or simply from living in and renovating homes with leaded paint built before 1980.

With the introduction of H.R. 2480, this Subcommittee is poised to solve an environmental and occupational health threat which has plagued mankind for over two millennia. We believe your bill goes to the heart of many of the problems associated with lead-based paint and the medical problems associated with exposure to it. We also believe that, with some refinements we would like to suggest, this bill will become the first truly comprehensive approach to eliminating this deadly toxin. For these and other reasons I will discuss, we commend you, Mr. Chairman, for the commitment you have shown to American's children and workers and for the alacrity with which you have moved to craft responsible legislation.

You will recall that I appeared before this Subcommittee on behalf of the Carpenters Union and General President Sigurd Lucassen in April to recommend a legislative package on lead. We are grateful that in the span of roughly three months, you have undertaken this strong legislative effort to address an overdue public and worker health need and we are also pleased that many of the recommendations we submitted are found in H.R. 2480.

The engine that will drive much of the work needed to eliminate leaded paint, for example, is the inspection requirement prominently featured in the proposed legislation. Time and time again, we have found that when the public and workers are permitted to know the hazards they face, they will react in responsible and prudent ways to eliminate them. As this Subcommittee is well aware, the inspection mechanism guarantees the public and workers the right to know the extent and severity of preventable injuries to their health. With that knowledge, an owner or lessor assumes a duty of due care, a duty which if breached causes liability under common law. In the case of this legislation, within two years after enactment, sellers and lessors of residential premises must arrange for licensed lead inspectors to conduct a lead inspection of the premises and provide a lead hazard inspection report to purchasers or lessees. The two-year grace period before the effective date of this provision is certainly adequate time for all parties to be put on notice of its requirements. Moreover, as you are aware, the inspection requirement itself has been utilized to great success in the state of Massachusetts.

Similarly, the requirements of strong lead abatement standards will, with minimal refinement, protect the occupants of residences and the workers involved in deleading.

In our view, the Bill also is responsible and quite cautious in providing for a report by the implementing agency on lead inspection and abatement methods and devices within the first year after enactment of this title. The clear intention of this language is above reproach—the agency must learn, among others, what the most health-protective, cost-effective and building-modernizing improving abatement work practices are before setting the necessary standards governing owners and contractors in the private sector. This is an approach Congress failed to fully utilize when asbestos abatement was being considered, to the great detriment of that control industry which rapidly developed after enactment of Asbestos Hazards Emergency Response Act of 1986 ["AHERA"].

Licensing and certification of inspectors, deleaders and laboratories are another strong feature of the Bill. We believe that federal regulators must accredit training providers to train and certify both lead inspectors and deleaders in compliance the lead abatement standards established by this legislation. The model established by AHERA and subsequent regulations have proven the accreditation/certification approach to be a worthy precedent in establishing strong health protections for the public and workers. In addition, the provisions establishing a strong public education program upon enactment serves well the public's need to know and lays the necessary groundwork for later inspection and abatements, where applicable.

As with AHERA legislation, this bill has rightfully taken on the task of decontaminating schools and day care centers first, (unfortunately day care centers were left out of the AHERA legislation in 1986) and provides some money, although probably not enough, to assist schools and day care centers with deleading.

The bill has also seen to it that children are routinely screened for elevated blood-lead levels. In our experience, many pediatricians in this country are unfamiliar both with the hazards associated with ingestion of lead through means other than eating chipped paint and with the need to do routine screenings. Such screenings are the only true prevention and intervention mechanism known, short of an unconditional abatement requirement.

While we emphasize our support for this legislation, we would also recommend the following further refinements which we think are encompassed within the broad public health protection objectives H.R. 2480 establishes:

(1) With respect to lead poisoning prevention, we would extend the benefits beyond infants and children to exposed workers as well. In addition, we suggest that screenings look not just for elevated blood-lead levels, but for all body lead burdens. This would give the Centers for Disease Control the opportunity to develop standards which measure and provide preventive interventions for chronic lead exposures. As the Chairman is well aware, blood lead levels only tell a story of exposures to lead within the past 30 days. The technology for measuring chronic exposures and their effects is on the horizon and should be taken into consideration here.

(2) While we well see the logic in providing much of the responsibility for administering the lead paint provisions in the hands of the Secretary for Health and Human Services, we believe the Administrator of the Environmental Protection Agency, by virtue of his experience in administering similar programs for asbestos, may be in a better position to regulate the bill's provisions regarding accreditation and certification of inspectors and deleaders. In addition, in order to maintain appropriate national training programs, as many labor-management training funds do, EPA should accredit training providers, not just individuals, and certify both inspectors and deleaders to comply with the inspection and abatement standards contained herein.

(3) Rather than maintain lists of accredited instructors, licensed inspectors and licensed deleaders, the administering agency (again, we prefer EPA) may lighten the paperwork burden by maintaining lists of accredited training providers and of the instructors utilized by such providers. Unions and others are extremely sensitive to providing lists of workers they have organized and trained to be plundered by others who are unwilling to invest the time and money in training and education.

(4) With respect to the contents of lead hazard inspection reports, testing before and after lead abatement should be done so that public health is protected. Post-abatement inspections should certify that appropriate clearance levels have been reached before the inhabitants resume occupancy.

(5) With respect to both Section 2802 (a) and (c), health protection and modernization of the facility are important factors to be considered in setting the standards for the proper abatement procedures. We assume this was intended by the sentence which reads: "the standard shall prescribe approved lead abatement methods and devices to eliminate, reduce, or prevent lead hazards taking into account reliability, effectiveness and affordability."

(6) The bill's key provision from a public health and worker standpoint involve the agency's establishment of strong lead abatement standards. Section 2802(c) should therefore also reflect the worker protection guidelines incorporated in Chapter 8 of "The Interim Guidelines for Hazard Identification and Abatement for Public and Indian Housing" issued by HUD, a document upon which the legislation relies in another provision in the legislation.

(7) Section 2802(e)(2) should also make clear that a person performing lead abatement in a covered premises must comply not only with procedures for lead abatement but be a certified deleader as well.

(8) We also recommend as an addition to the bill that states be required to maintain for public disclosure lists of schools and day care centers where lead-based paint has been found as well as those which have eliminated lead-based paint pursuant to this legislation.

Mr. Chairman, the legislation you have introduced gives all of us hope that the needless exposures and illnesses associated with lead will come to an end once this legislation is properly implemented and enforced. The leadership you are demonstrating and the fundamental service this legislation performs means that some

Americans will not face physical or mental disabilities from high lead exposures, and that many, many others, will reach adulthood and old age with their native intelligence unimpaired by this insidious, manmade scourge.

Mr. Chairman, we are deeply grateful for your commitment, for the opportunity to testify here today and, most importantly, for the strong legislation we are confident will be enacted by this body and signed into law this year.

Thank you.

Mr. WAXMAN. Mr. Jones.

STATEMENT OF RICHARD JONES

Mr. JONES. Mr. Chairman and members of the subcommittee, my name is Richard Jones, senior vice president of Management Services Corp., based in Charlottesville, Va., operating over 2,400 units.

Today I'm testifying on behalf of the National Apartment Association. Accompanying me is Theodore Adams, Esq., of Christian, Barton, Epps, Brent & Chappell, based in Richmond, Va. We appreciate the opportunity to appear before the subcommittee to discuss H.R. 2840 and the problems associated with lead-based paint on multifamily housing properties.

NAA members have struggled to reduce exposures and yet, not impact housing affordability. Renters already spend a disproportionate share of their income for housing. NAA believes that everyone has a right to a safe and healthy environment. However, the threat of lead exposure continues to be problematic for the management of safe, healthy, and affordable housing, and water supply throughout the country.

Even with all the years of research and legislation, NAA is concerned about the patchwork effect that these initiatives have taken. The problems of lead in the environment are ones that need to be solved by teamwork and coordination. Building owners and managers are facing exorbitant costs to abate LBP without assurance that intact paint is the major and sole contaminant.

HUD and the Centers for Disease Control have indicated that perhaps the majority of lead poisoning in children stem not from intact LBP, but from lead contaminated dust, which is not necessarily from intact paint.

HUD reports that, "The multiplicity of sources of lead in the environment makes it difficult to measure the exact contribution of LBP to lap."

Many States are taking the lead problem in children as a priority public health issue. At the Federal level, NAA would like to see legislative and regulatory initiatives that comprehensively address a number of concerns which are listed in our written statement.

However, we believe that the bill falls short of a comprehensive approach and does little to reduce the amount of lead in the environment.

Our oral comments focus on the training and inspection standards and the disclosure provisions. NAA supports initiatives to improve the qualifications of LBP abatement workers. A major dilemma for building owners and managers is the availability of a qualify work force. Poorly trained workers increase the danger to the public by improper work procedures.

NAA does not support section 2802 because it will not serve the purpose for a comprehensive Federal policy. Instead, we believe it will lead to an overreaction of the marketplace, create unnecessary exposures, and decrease opportunities for affordable housing.

The timetable contradicts the intent of the legislation. The bill requires establishment of accredited training programs for workers after a 2-year period. And yet, the inspection standard is to be developed within a 1-year timeframe. The standard will be carried out by improperly trained work force.

The provisions for a lead inspection standard are very detailed, very costly, and very inflexible. We do not understand the necessity of having to wait for Health and Human Services to request a request for modification within an 18-month period. This is not an efficient process.

The NAA supports voluntary disclosure of any known environmental hazard. However, based on each property's operation and local regulations, the owner or manager must make a decision about disclosure. Too often, disclosure causes widespread fear and litigation problems. The presence of educated consumers, increasing environmental due diligence, legislative and regulatory activity of States, and desired renovations, serve to address the lead issue in a far more orderly way.

We seek clarification when the bill requires a lead hazard inspection. Does the bill intend to refer to the leasing of an entire building, or must inspection be done each time a unit is rented? In 1991, the national average resident turnover rate was 64.2 percent. Each apartment vacated generally has to comply with State or local requirements for cleaning and repainting before the next occupant. Direct exposure to LBP is reduced by the new, intact paint covering.

We also do not believe that HHS has the administrative experience to effectively design a disclosure statement to serve the real estate community. The EPA is far better qualified to address the disclosure statement.

To require such detailed inspection standards and detailed disclosure statements for every sale or leasing activity would cause numerous unsafe LBP removals. Without a qualified and trained work force, without adequate proof that intact LBP is the major source of childhood poisoning, without research detailing the source and toxicity of LBP dust, without consideration of other lead sources impacting children's health, the bill would create a tremendous economic burden upon the housing community and it would still not address lead contamination from other sources.

To alleviate the housing crisis and the tremendous economic burdens, NAA recommends voluntary disclosure that would include one, known information, two, specific disclosure for transaction needs, and three, use of past disclosure statements.

The importance of public education programs cannot be stressed enough. However, we believe that HHS should not be solely responsible for this effort. The main thrust of preventive care should be handled by other Agencies with more housing experience.

NAA members are not adverse to addressing environmental hazards. A major concern with addressing environmental hazards is the lack of agreement as to what is a true threat to the public and where the true source originates. There is consensus that LBP is not the major culprit of lead poisoning. Further research needs to be done on the associations of dust, soil and paint.

We ask the subcommittee to consider the affordable housing crisis and weigh the economic consequences just as importantly as the questions of health.

Thank you.

[Testimony resumes on p. 510.]

[The prepared statement of Mr. Jones follows:]

TESTIMONY

OF

RICHARD JONES
SENIOR VICE PRESIDENT
MANAGEMENT SERVICES, INC.

FOR THE
NATIONAL APARTMENT ASSOCIATION

Mr. Chairman and Members of the Subcommittee, my name is Richard Jones, Senior Vice President of Management Services based in Charlottesville, Virginia operating over 2,400 units in Richmond, Manassas and the Charlottesville area. Today, I am testifying on behalf of the National Apartment Association.* Accompanying me is Theodore Adams, Esq. of Christian, Barton, Epps, Brent and Chappell based in Richmond, Virginia. Mr Adams represents many members of the Virginia Apartment and Management Association and is very knowledgeable about the impact that environmental hazards have upon the multifamily industry.

We appreciate the opportunity to appear before the Subcommittee to discuss H.R. 2840, the Lead Contamination Control Act Amendments of 1991 and the problems associated with lead based paint (LBP) on multifamily properties. Like many others concerned about the lead problem in this country, NAA members have struggled to reduce exposures and yet, not impact housing affordability. And, quite frankly, given the extent of the problem, we believe that there is yet to be found an adequate solution that balances true risk and a cost effective solution.

For fifty two years, affordable rental housing has been the goal of the National Apartment Association. Renters who account for approximately 36 percent of all households in America spend a disproportionate share of their income for housing. In 1987, the typical renter household devoted approximately 29 percent of its $17,550 income to housing expense. 9.3 million renters in 1987 had incomes of less than $10,000 and spent almost 60 percent of their income for housing.

It is ironic that this hearing takes place less than a week after a hearing was held on the report submitted by the Advisory Commission on Regulatory Barriers to Affordable Housing. The Commission found that housing costs are being driven up by "an increasingly expensive and time-consuming permit-approval process...exclusionary zoning rules and well-intentioned laws aimed at protecting the environment and other features of modern-day life." It is this well intentioned goal of reducing childhood lead poisoning by required inspection and disclousre which can cause an enormous setback for affordable housing.

---

*The National Apartment Assosciation (NAA) is a trade association representing over 200,000 multifamily professionals including owners, developers, builders, managers, and industry suppliers of over three million rental units and condominums nationwide. The NAA is headquartered at 1111 14th St., NW Suite 900, Washington, D.C. 20005

Before Congress recognized the problems with LBP in the early 70's with the enactment of legislation in 1971 and 1973, LBP was routinely used on the exterior and interior surfacing of multifamily and single family residences. A final ban was enacted by the Consumer Product Safety Commission in 1978. The Department of Housing and Urban Development (HUD) in its' report to Congress, the "Comprehensive Workable Plan for the Abatement of Lead Based Paint in Privately Owned Housing" has estimated approximately 57 million housing units contain LBP, of which approximately 19 million are rental apartment units.

Unfortunately, LBP is not the only environmental hazard facing the operation of multifamily properties. While NAA believes that residents have a right to a safe and healthy environment, we are concerned about significant amounts of capital spent on existing structures for the cleanup of hazards that may or may not pose a direct threat. Many research efforts have shown that the hazards are real but questions of low level exposures which pose a direct threat are still unanwsered. For instance, the public policy debate over asbestos is a perfect example of a hazard that has generated much hysteria, significant costs for routine repair work, lost financing sources and information that is unclear and misleading. There is no debate that high level exposure can be dangerous. However, the debate of low level exposure continues to generate significant problems for the management of safe, healthy and affordable housing. Inaccurate information and public hysteria over the potential for threat has created serious economic problems for an industry that is already rocking the very core of the financial markets in this country. Unfortunately, the response of our industry when they are forced to pay for the testing and mitigation responses of hazards that may or may not pose a direct threat is to consider increasing rents and thus, decrease the opportunities for affordable housing.

A recent management experience with asbestos can highlight the difficulty of balancing affordable housing with the costs of mitigation. At a Charlottesville townhouse project, my company has spent nearly two years searching for an affordable way to repair a severely leaking roof built with asbestos shingles. The repair itself is very simple and relatively inexpensive. However, we are afraid of having our maintenance people do the repair because of OSHA violations and therefore, we have been seeking affordable and liscensed asbestos contractors do the work. We are still seeking an affordable solution while the roof continues to leak.

NAA members do know the dangers of lead hazards and are particularly aware of the problems of childhood lead poisoning. We realize the significant role that our industry must play in abating this hazard. We are eager to work with the Congress, federal agencies, state and local policy makers, the medical profession and the child advocates to develop a comprehensive policy to reduce childhood exposure.

There is much work to be done in developing a comprehensive framework for the reduction of this hazard. Even with all the years of research and legislation, the NAA is concerned about the patchwork effect that these initiatives have taken. The problem of lead in the environment is one that needs to be solved by teamwork and coordination. The Environmental Protection Agency (EPA) is appropriately attempting to do this as they reported in their February 1991 White Paper on "Strategy for Reducing Lead Exposures." Even after twenty years of research on lead poisoning, building owners and managers are facing exorbitant costs to abate LBP without assurance that intact paint is the major and sole contaminant. The HUD report as well as a recent report from the Center for Disease Control (CDC) have indicated that the most likely vehicle for the majority of lead poisonings in children stems not from intact LBP but rather from lead contaminated dust, ingested by children through normal hand-to-mouth activity. The dust is not necessarily from intact paint. In fact, HUD reports that "The multiplicity of sources of lead in the environment makes it difficult to measure the exact contribution of LBP to lead poisoning. MUCH DEPENDS ON THE SITUATION [emphasis added]"

NAA wants to be a participant in the solution of childhood lead poisoning in this country. Therefore, we support the growing framework of solutions but believe that there are still many more questions to be answered before pushing an initiative that is so focused that it will have little overall effect. Many current activities are focused on specific aspects of the problem but there seems to be lacking a leadership for coordination for a truly effective public policy. The provision of funds in H.R. 2519, the Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriation bill for 1992 which was recently passed in the Senate includes additional money for continued federal lead efforts and report language notes the lack of framework or policy. Their answer is to fund a new Office of Lead Abatement and Poisoning Prevention which would attempt to control all of HUD's related activities. This is the type of effort that is needed but needs to be expanded to include other agency efforts.

BEST COPY AVAILABLE

In addition, many states are taking the lead problem in children as a priority public health issue. Disclosure and testing for LBP are major elements in many states. Massachusetts has taken a comprehensive approach which requires not only property owners to be involved in lead hazard disclosure but requires the medical profession to screen children, the training and licensing of workers, and low cost financing options. Undoubtably, this comprehensive program is costly to the state but Massachusetts has decided that this is a priority concern for them. Other states may or may not be able to afford the luxury of such a costly program, but many are seeking solutions to this problem.

NAA would like to see legislative and regulatory initiatives comprehensively address following concerns: 1) routine testing of all children under the age of 7, particularly those at lower socio-economic levels, 2) Immediate investigations of the sources of childhood lead poisoning; 3) Solutions to the high cost of testing and mitigation; 4) Encouragement of research to find affordable technology for testing and abatement; 5) Public education efforts with clear risk communication that does not alarm but rather encourages citizens to work public policy advocates in solving childhood poisoning; 6) Low cost LBP testing and abatement financing for the multifamily industry; 7) Development of additional monies for states for the financing of abatement work; 8) Incentives to encourage the development of operations and management programs, modeled after the EPA Guidelines for Building Owners and Managers; 9) Market based initiatives that would not discourage building owners and managers in advising their residents about lead hazards; 10) A definitive method of prioritizing high risk children and units; 11) Market based initiatives that would create a qualified work force and a work force capable of handling a potentially large amount of testing and abatement work; 12) Dust spread analysis; 13) Clear distinction of the definition of abatement which could mean removal, encapsulation, or repair but does not encourage one method of abatement over the other; 14) Consideration of the unique nature of the apartment industry with its dependence of its units being occupied; 15) Clear options when residents are displaced and alternative affordable housing must be met; and, 16) Cost effective solutions to waste disposal of lead products after abatement or renovations.

It is from this perspective that NAA would like to comment upon H.R. 2840, the Lead Contamination Control Act Amendments of 1991.

NAA applauds the intent of the sponsors of H.R. 2840 in trying to promote the education and the awareness of consumers of lead in drinking water and paint. We also support the encouragement of grants for screening and treatment of elevated blood-lead levels in infants and children.

However, we believe that the bill falls short of the comprehensive approach so necessary and does little to reduce the amount of lead in the environment as other legislative initiatives. In addition, while the bill provides for public awareness and education, the provisions do not provide for clear risk communication and in effect, will be economically damaging to all involved. The real effect of the outlined disclosure to building residents and buyers will cause unwarranted removal of LBP which due to dust problems could actually raise the risk to unaware occupants. Usually, removal as an abatement strategy is not in the best interests of occupants due to the dust that may cling to clothing, furniture, walls and ceilings. Many leading authorities in the scientific community are beginning to promote alternative measures such as encapsulants because of the dust problem. With respect to water problems, it is unclear what the responsibility of management will be to occupants if the building's pipes and solder were creating excessive lead counts in the tap water. This responsibility may be decided in the market where current residents or potential residents may opt to rent elsewhere but, unfortunately, we suspect that it will be decided in court. While we understand that EPA has finalized this compliance, we are concerned about the bill's expansion of scope to include smaller and medium sized water systems - as well as noncommunity water systems. This would impact on many small rental apartment business that are owned for retirement or family business purposes.

While the intent of the legislation is laudable, NAA disagrees with the approach that the bill requires. As stated above, we believe a comprehensive approach is necessary and seller disclosure as required in this legislation creates more problems than it solves.

Specifically, our comments on the individual provisions follows:

Section 3: Lead Contamination in Drinking Water

We believe that the additional requirements to the regulations promulgated by the EPA on May 6, 1991 are overly burdensome in compliance and will cause excessive increases to water bills that are already costly. This is particularly true for the pressure on states to require small or medium-size water systems to comply with the corrosion control studies stipulated by subsection (c).

The disclosure requirements to occupants by the water system are fair and reasonable. NAA is very supportive of providing educational materials that describe the problem and suggest steps to reduce exposure. However, NAA is concerned about the suggested text for two reasons. Our recommendation is to place the provisions describing remedies near the beginning of any disclosure materials. To inundate occupants with so much literature as required by the bill could cause residents to overlook this very important information.

The second concern deals with clear risk communication that does not create public hysteria and unnecessary responses. The wording of "toxic chemical lead" is very alarming and really unnecessary particularly if a discussion of the health effects of lead is included. It is important for all parties to continue an educated rationale approach to lead problems and not create unnecessary alarm.

Section 2801: Lead Inspection and Abatement Training and Licensing

The NAA is very supportive of initiatives to improve the qualifications of workers responsible for the inspection and abatement of LBP. A major dilemma of building owners and managers is the availability of a workforce that is adequate in numbers and training to handle the reduction of environmental risks. So often poorly trained workers increase the danger to the public of a specific hazard by improper work procedures. In addition, when unemployment is high in a market area, many tradesmen believe that if they are trained in the abatement of a hazard such as asbestos then they can abate lead without additional training. This poorly trained workforce can also occur when effective dates of legislative or regulatory compliance mandates are implemented without regard to the availability of a well trained workforce. To force compliance before the market place is ready is irresponsible to the very audience it is intending to protect.

Section 2802: Lead Inspections, Lead Disclosure Statements and Lead Abatement.

The NAA does not support the requirements of this section because it will not serve the purpose of the development of a comprehensive federal policy. Instead, we believe that several provisions will lead to an over-reaction of the marketplace, create unnecessary exposures and forego any opportunity for affordable housing as a national goal.

This bill requires the development of standards by the Secretary of Health and Human Services (HHS) for the performance of lead inspection as well as training of abatement contractors and workers. The legislation is improperly directed to a department that has no expertise in building operations, design or construction materials. It also has no experience in training building inspectors. It is our concern that an agency without administrative experience in the building or real estate industry impose a perspective that does not rely upon the technical expertise developed in the industry or administrative experience. This inexperience will create unworkable standards that will impose unnecessary and costly burdens on building owners and managers. Building owners and mangers use environmental professionals because of their expertise and sound judgement when testing or abating. Environmental professionals rely on their knowledge of building systems to provide cost effective assessments. We support language in legislation introduced earlier in Congress which recognizes the collective operating knowledge of all the agencies and directs them to work together under the leadership of the EPA in the development of training standards .

There appears to be no specific requirement for HHS to consult with building experts nor to open the standard for informed public comments. Therefore, if the legislation is enacted with HHS responsible for standard development, NAA believes it is imperative to request specific language in this bill that the Secretary must provide notice for public review and comment by interested parties knowledgeable in the training, building and medical fields.

The timetable that the bill sets out is not consistent with the intent of the legislation. As previously noted, building owners and managers face an inadequate supply of qualified workers for lead abatement. The bill requires establishment of accredited training programs for workers after a two year period, and yet, the inspection standard is to be developed within a one year time frame. This is an awarkward approach that does not practically affect the goal of less exposure. The standard will be carried out by a workforce that has not been properly trained to do it.

The provisions for a lead inspection standard go far beyond any other hazard inspection program. Using asbestos as an example, the inspection is tailored to the specific building and the needs of the building owner or manager. The provisions outlined in the bill are very detailed, very costly and very inflexible. The ability to do the type of inspection called for in this legislation is not realistic, particularly in the rental of apartment units. Building owners and managers rely on the expertise of environmental consultants to address their problems in a timely manner. We question the necessity of having to wait for the Secretary of HHS to review a request for modification within an 18 month period when the Subcommittee is seeking a timely resolve to the lead problems in this country.

Section 2803: Disclosure of Indoor Lead Hazards

The NAA supports voluntary disclosure of any environmental hazard, if known, to any buyer or applicant. We believe that it is good business practice. However, based on each property's operation with its unique blend of residents, its type of operation, and local regulations, the building owner or manager must make a decision about disclosure. Too often, disclosure of a hazard that is not a direct health threat to the resident causes widespread fear and creates a litigation nightmare. In addition, the presence of educated consumers, increasing due diligence by lending institutions, the recent activity of states in addressing this issue and more renovations to increase competitive standing in a specific market all serve to address the lead issue in a far more orderly way than mandatory inspections which are improperly developed.

We also seek clarification as to when the bill requires a lead hazard inspection. According to the bill, a lead hazard inspection must be done when any "person who sells or leases a covered residential premises..." The definition of a "covered residential premise" refers to the "interior and exterior of any building constructed before 1980 which is used for single or multifamily residential purposes." Does the bill refer to the leasing of an entire building so the inspection must be done before any unit is occupied or must an inspection be done each and every time a unit is vacated and rented again? According to NAA's 1991 Survey of Income and Expenses in Rental Apartment Communities, national average turnover rate (the proportion of units moved out of in a twelve month period) was 64.2%. Each apartment that is vacated generally is cleaned and repainted for the next occupant which is regulated by state or local public health regulations. Since LBP, the surface most exposed to occupants, can be encapsulated by other types of paint, direct exposure to occupants is lessened by the new intact paint, even on baseboards and moldings.

We are also surprised at the detailed requirements for the Secretary of HHS to publish a disclosure statement. Again, while there is no requirement for the Secretary to open this statement up for public comment, we seek language requesting requirements for public review and notice. In addition, we do not believe that HHS has the administrative experience with overall programming to effectively serve the building community. The EPA is far better qualified to address the type of issues that the bill is seeking in the disclosure statement.

To require such detailed inspection standards and detailed disclosure statements for every sale or leasing activity unless "such inspection indicates no lead paint in the premises, at the option of the sellor [seller] or lessor the lead hazard inspection report prepared on the basis of such inspection may be used in lieu of the lead disclosure statement." would basically cause numerous unsafe LBP removals. Without a trained workforce, without adequate proof that intact LBP is the major source of childhood poisoning, without research detailing the source and toxicity of LBP dust, without consideration of other lead sources impacting children's health, the bill would create a tremendous economic burden upon the building community. This burden has been estimated by HUD at averaging between $5,500-7,700 per housing unit which for a 100-unit, 3-bedroom apartment building would be nearly two million dollars and still would not address lead contamination from other sources. A city administrator in the Northeast indicates that in his city a 3-bedroom townhouse would cost $20,000 to abate.

To alleviate the housing crisis and the tremendous economic burdens, the NAA, therefore, recommends a voluntary disclosure that focuses on the following items: 1) provision of information at the time of building or unit transaction that provides information about the age of the building and the hazards of lead in the environment; 2) If an inspection is to be done, a standard should be used that is specific to the needs of the transaction, limited so as to be cost effective and only for the building; 3) Use of past disclosure statements such as information from water system reports; and 4) No inspections for every unit newly rented. We suggest these recommendations based on our purpose to maintain affordable rental housing and provide housing choices to our residents. If an inspection is required for each and every rental, residents may be required by some owners or managers to place an additional deposit for their apartment to help subsidize the inspection or face sharp rental increases.

Section 2804. Public Education Program

The importance of the public education program can not be stressed enough. However, we believe that HHS should not be solely responsible for this effort. While HHS has experience with health providers and inspectors, the main thrust of preventive care should be handled by other agencies with more building industry experience. For instance, the EPA has had experience in providing and disseminating information for the protection of the public such as with the issues of asbestos, radon, and indoor air pollutants. In addition, HUD has had long experience with protection of the housing community. While HUD has had its share of administrative problems, the expertise in working with the housing community can assist the public education effort.

CONCLUSION

Much has been said about the lack of movement in addressing the lead hazard problem in this country. While NAA acknowledges that lead is still a public health problem, we disagree that the issue has not progressed towards a resolution. There are House and Senate bills that promote the reduction of lead, legislation for funding state trust funds, legislative initiatives in the states to comprehensively address lead hazards and encourage disclosure of lead hazards, ongoing research for improved diagnostic evaluations of lead, increased public education and more federal funding to encourage research and information dissemination. HUD will continue their demonstration programs which will offer increased information on abatement techniques, worker protection and EPA will continue their research efforts. In addition, numerous nonprofit organizations are actively participating in the advocacy of children and the development of technical specifications.

NAA members are not adverse to addressing environmental hazards. However, we do oppose actions that are alarmist in nature, address only one aspect of a problem and are scientifically controversial. A major continuing concern with addressing environmental hazards, whether it is asbestos, radon or lead, is the lack of agreement by the scientific community as to what constitutes a true threat to the public and what constitutes the true source of the problem. There is general consensus by the scientific community, EPA and HUD that LBP is not the major culprit of lead poisoning. Further research needs to be done on the associations of dust soil, and paint. In fact in the HUD report, it is noted that dust analysis has been done with lead dust from soil because paint analysis is not currently technologically feasible.

We ask that the Subcommittee consider the affordable housing crisis and weigh the economic consequences just as importantly as the public health impact. The NAA is appreciative of the opportunity to explain our position and offer assistance in working with the members to further the progress in resolving childhood lead poisoning.

BEST COPY AVAILABLE

Mr. **Waxman**. Thank you very much, Mr. Jones.
Dr. Jackson.

STATEMENT OF RUDOLPH E. JACKSON

Mr. **Jackson**. I should say now "good afternoon", Mr. Chairman, and other members of the subcommittee. I am Dr. Rudolph Jackson—which, by the way, is spelled R-u-d-o-l-p-h. I am accompanied by Mr. Don Ryan, who is the executive director of the Alliance to End Childhood Lead Poisoning.

I am professor of pediatrics at the Morehouse School of Medicine in Atlanta. Just for a second, and only a second, Morehouse School of Medicine is one of the most recently established medical schools in this country and has the primary mission of training physicians to care for the underserved—whether they be urban, in town, suburban, rural or wherever—in any locale they may be found.

I have served on several faculties over the past several years. One of those was the Howard University School of Medicine here in Washington, where I served while there on the District of Columbia's Lead Committee. This was in the late 1970's. I also served as chairman of the department of pediatrics at the Meharry Medical College in Nashville, and most recently and presently at the Morehouse School of Medicine, where for a period of time I served as the acting chairman, for some 6 years, unbelievably. Now, as a part of my duties, I am serving as a consultant to the Georgia State Task Force on Lead Poisoning in Children. So you can see I personally have a tremendous interest in the childhood lead poisoning problem in many ways, as well as obviously including a member of the board of directors of the Alliance to End Childhood Lead Poisoning.

It is my pleasure to appear before you committee today on behalf of our organization, which is a new, national, nonprofit public interest organization, on which I serve, as I indicated, on the board of directors. I am extraordinarily happy to express and to give to you the Alliance's unqualified and most enthusiastic endorsement of the Lead Contamination Control Act of 1991. I believe this piece of legislation marks a critical turning point in the battle against childhood lead poisoning.

Mr. Waxman, who has stepped out, Mr. Sikorski, who is in his place now, I want to thank both Mr. Waxman as well as others for your personally pursuing this whole problem and for your steadfast leadership in the past in reducing lead exposures, from gasoline as well as industrial emissions. You deserve a special praise for your leadership, your tenacity, and most certainly your endurance in the still continuing struggle to establish protective standards for lead in drinking water.

Environmental health experts tell us that we know more about lead than any other environmental toxin. Over 3 million children, as has been said several times, are being adversely affected by lead today, according to both the EPA and HHS.

As such, low level lead poisoning amounts to an epidemic. According to the CDC and EPA, "the lead problem is the No. 1 environmental health hazard to American children today."

H.R. 2840 is a landmark piece of legislation, significant in many respects. First and foremost is the fact that this bill tackles head on, I believe, the hazards of lead paint poisoning in millions of American homes. There is consensus among HHS, EPA and HUD that lead paint and dust account for the most intensive exposures and are the overwhelming causes of lead poisoning in children.

According to the Department of HUD, over half of the U.S. housing stock contains some lead-based paint. Some 3.8 million homes are further deemed by HUD to be "priority hazards", posing immediate dangers to the young children now living in them.

The Alliance commends your bill's requirement for the widespread inspection of housing to identify lead-based paint hazards. In the past 5 years, the Congress has made what I would like to say is the right to know as a fundamental premise of environmental health, the right to know. This principle is just as relevant to lead paint hazards endangering children in their indoor environments as it is to industrial air emissions.

The Department of Housing and Urban Development has been widely criticized—and with good cause, I believe—for its lack of action on lead-based paint. But I want to remind this committee that HUD is not a regulatory Agency. It is a program Agency, a subsidy provider, with absolutely no reach over the vast majority of the U.S. housing stock. EPA is the Federal Agency, in my mind, with primary responsibility for seeing that the public is protected from environmental health hazards. Yet, to this very day—and I softened my statement here, until I found out that the EPA people were not here this morning—we have concerns as to EPA's claims that its role is only that of——

Mr. SIKORSKI [presiding]. Dr. Jackson, Mr. Waxman may have stepped out to do an interview, but I am enforcing the 5-minute rule. Your entire statement will be made a part of the record.

Mr. JACKSON. Thank you.

Mr. SIKORSKI. I want to thank you and all members of the panel for your assistance and your testimony.

Mr. JACKSON. Mr. Chairman, in order for me to summarize, I will give you a summary statement.

Mr. SIKORSKI. Sure. I'm easy. Go ahead.

Mr. JACKSON. Thank you very much.

I think the CDC is going to come out with a statement that there should be universal screening. That means every child should be screened, not a poor child, not a black child, but all children, not an inner city child, but all children should be screened, and that there should be funds to do this. I believe the CDC has been working on this.

But this is going to give us a great deal more information which will allow us to get at where the sources are and put our emphasis where it ought to be.

I think that, in closing, I would say this. The Alliance wishes to commend this committee and to each one of you for your leadership in the long battle to end childhood lead poisoning. I would say, finally, we wholeheartedly support H.R. 2840 and urge its early consideration by the Energy and Commerce Committee and subsequent passage by the full House.

Thank you very much.

[The prepared statement of Mr. Jackson follows:]

TESTIMONY OF Rudolph E. Jackson, M.D.
ALLIANCE TO END CHILDHOOD LEAD POISONING

July 26, 1991

Before

Honorable Henry Waxman, Chairman
Subcommittee on Health and Environment
Committee on Energy and Commerce
U.S. House of Representatives

Good Morning, Mr. Chairman:

I am Dr. Rudolph Jackson, Professor of Pediatrics at Morehouse School of Medicine. It is my pleasure to appear before your Committee today on behalf of the Alliance To End Childhood Lead Poisoning, a new national nonprofit public interest organization on which I serve as a member of the Board of Directors. The Alliance is a new organization -- barely 9 months old -- formed by leaders in medicine and research, public health, environmental protection, low-income housing, education, and children's welfare. The Alliance's founders and directors come from different backgrounds and bring different perspectives but have in common a deep frustration with the Federal government's failure over the past two decades to address childhood lead poisoning effectively.

The Alliance's comprehensive approach to wiping out childhood lead poisoning combines education and advocacy efforts with technical assistance and policy support. Among other things, we are assisting various Federal agencies in working through the difficult technical and policy impediments to progress in wiping out this disease. The Alliance is funded about half by private foundations and half by special project grants from Federal agencies. We accept no funds from industries with a direct economic stake in this issue: the lead or paint industries, cleanup contractors, or abatement product manufacturers. I would like to insert for the record biographical sketches of our Board of Directors to demonstrate the depth and diversity of the Alliance.

It is my pleasure today to give you the Alliance's unqualified and enthusiastic endorsement of the Lead Contamination Control Act of 1991, H.R. 2840. This piece of legislation marks a critical turning point in the battle against childhood lead poisoning. I would go so far as to say that this bill is the "beginning of the end of this entirely preventable disease."

Mr. Waxman, I want to thank you personally for your steadfast leadership in the battle against lead poisoning over the past two decades. You had a significant hand in the steps taken to successfully control lead exposures from gasoline and industrial emissions, as well as tightening the National Ambient Air Quality Standard for lead. And you deserve special praise for your leadership, tenacity and endurance in the still continuing struggle to establish protective standards for lead in drinking water.

Environmental health experts tell us that we know more about lead than any other environmental toxin. And this knowledge is chilling, as lead adversely affects the human body in a number of ways. Lead is a probable human carcinogen. Lead causes damage to the kidney and liver. Lead causes high blood pressure and adverse reproductive effects. But, at lower exposure levels, lead is of most immediate concern because of its powerful neurotoxic effects. Even at very low doses, lead interferes with a child's developing brain and nervous system, causing IQ reductions, reading and learning disabilities, hyperactivity, and reduced attention span.

In contrast to most other environmental contaminants, children in this country do not face a risk of lead poisoning. Over three million children are being adversely affected by lead today, according both to EPA and HHS. Low-level lead poisoning amounts to an epidemic. This is not conjecture -- all we need to do is test children's blood. Unfortunately, in nine out of ten cases, children are not now being tested.

Lead-Based Paint Hazards

H.R. 2840 is a landmark piece of legislation, significant in many respects. First and foremost, is the fact that this bill tackles head-on the hazards of lead-paint poisoning in millions of American homes. There is consensus among HHS, EPA and HUD that lead paint and dust from lead paint are the overwhelming causes of lead poisoning in children. Lead paint hazards remain the single most serious source of intensive lead exposures. And across the country over the past two decades, lead-based paint hazards have gone unattended in the vast majority of cases.

According to the Department of Housing and Urban Development, over half of the U.S. housing stock contains some lead-based paint. Some 20 million U.S. homes -- one out of every five -- have lead paint hazards. And according to HUD, 3.8 million homes are "priority hazards," posing immediate dangers to the young children now living in them. The magnitude of this environmental health hazard is simply overwhelming.

The Alliance commends your bill's requirement for the widespread inspection of housing to identify lead-based paint hazards. In the past five years, the Congress has made the "right to know" a fundamental premise of environmental health. This principle is just as relevant to lead paint hazards endangering children in their indoor environments as it is to industrial air emissions. The Alliance believes that the bill's phase-in schedule is more than adequate to allow for the evolution of trained and qualified inspectors and cleanup contractors. In fact, the Alliance would urge that greater emphasis be placed in the near-term on efforts to develop and distribute educational materials and provide technical assistance to the public. The fact of the matter is that not one single pamphlet or brochure is available from either HUD, EPA, or HHS to provide practical guidance to parents on how to deal with lead-paint hazards in their homes.

The Department of Housing and Urban Development has been widely criticized -- and with good cause -- for its lack of action on lead-based paint. But, I want to remind this Committee that HUD is not a regulatory agency; HUD is a program agency, a subsidy provider, with absolutely no reach over the vast majority of the U.S. housing stock. EPA is the Federal agency with primary responsibilities for seeing that the public is protected from environmental health hazards. Although EPA's failures on lead-based paint have not been as widely celebrated as HUD's, the Agency's refusal to meet its responsibilities for lead-paint poisoning has contributed directly to the continuing epidemic. To this very day, EPA claims that its role is only "technical assistance to HUD." Mr. Chairman, it is essential that the Congress make clear to EPA their direct responsibility for solving the myriad technical and policy obstacles to cleaning up lead-based paint hazards in housing.

I want to focus my comments today on the single most immediate obstacle to progress: the lack of an accreditation system to assure the certification of abatement inspectors and contractors and the proper training of workers. Currently, except in the states of Massachusetts and Maryland, parents and homeowners have virtually no chance of finding a trained, qualified contractor to do lead-based paint testing and abatement. Across the country, thousands of workers are being poisoned every day by lead exposures from painting and home renovation projects conducted with improper techniques and without protective equipment. For both asbestos and radon, EPA has undertaken the task of assuring the adequacy of training programs and the quality control of contractors. EPA is the only agency equipped to take on this task. HUD wants EPA to establish this system -- OSHA wants EPA to establish this system. It is absolutely essential that the Congress order EPA to carry out this responsibility -- and as a matter of the highest priority.

There are a number of other technical obstacles waiting for resolution by EPA and other agencies, including standardizing test protocols, assuring laboratory testing proficiency, and evaluating abatement techniques and products. In the near future, the Alliance will be providing detailed technical comments to the Committee staff dealing with these issues as well as the broad range of related infrastructure and implementation steps to support nationwide efforts to abate lead-paint hazards in housing.

Confusion still persists among executive branch agencies over the assignment of responsibilities. For real progress to be made in the near term, it is essential that the Congress sort out responsibilities and make specific assignments. This bill must make clear that the technical issues related to lead-based paint risk assessment, inspection, laboratory testing, abatement standards, and contractor training and worker protection are the responsibility of the Environmental Protection Agency -- not HUD, not HHS, but EPA.

Lead in Drinking Water

Mr. Chairman, the Alliance also strongly supports the provisions in H.R. 2840 establishing protective, meaningful and enforceable standards for lead in drinking water. Although lead-based paint is the overwhelming cause of poisonings in children with the most highly elevated blood lead levels, drinking water contributes to background lead levels across the entire U.S. population. The best estimates are that drinking water contributes between 10 and 20 percent of the population's total lead burden. In most situations corrective measures to reduce drinking water exposures are inexpensive and cost effective. Common sense and economics requires that we take advantage of every useful opportunity to reduce lead exposures.

In addition, in some situations drinking water contamination is the primary cause of lead poisoning, with infants being fed formula mixed with contaminated tap water at most immediate risk. As you know better than anyone, Mr. Chairman, the process of regulating lead in drinking water over the past six years has been an essay in frustration. The Alliance has reached the same conclusion that you have: meaningful regulation of lead in drinking water will require -- quite literally -- an Act of Congress. H.R. 2840 is effective in remedying the several crippling deficiencies in EPA's recent lead in drinking water regulations.

Lead Screening

The Alliance also applauds the provisions in H.R. 2840 reauthorizing and extending the categorical grants by the Centers for Disease Control (CDC) for state and local screening programs for childhood lead poisoning. We support the increase in the authorization to $40 million in 1992 and would urge you to consider additional increases in the future. We also want to emphasize that the Administration, which in the past had opposed this CDC grant program, reversed its position this past January and proposed to double these grants in the President's 1992 budget.

The Alliance believes strongly that to end the epidemic of childhood lead poisoning, a fundamental shift from reaction to prevention is essential. Strictly speaking, screening programs are not prevention -- they seek to identify the child already poisoned and take subsequent steps to clean up the hazard. But, expanded screening is vitally important to identify all children poisoned and at risk and to target prevention efforts most effectively.

Within the next 60 days, CDC is scheduled to release their revised guidelines for lead poisoning prevention. These guidelines are expected to call explicitly for "universal screening." Universal screening means that every child -- not every poor child, not every black child -- but every child should be screened. In contrast, we are currently only screening about one child out of ten. I want to emphasize that the changes that are required are not incremental. The changes required are not marginal adjustments. We must bring about an order of magnitude increase in the number of children being screened -- both by private physicians as well as the local health department. We must dispel the myth that childhood lead poisoning is only a disease of the poor.

I also want to point out one important fringe benefit that these screening grants provide: a system for collecting and reporting standardized data on childhood lead poisoning. Currently, no such system exists -- we have no reliable data on how many children are being tested and how many are found with elevated blood lead levels. These screening grants are critical to laying the foundation for a national system of data reporting.

Lead in Schools and Day Care Centers

The Alliance also strongly supports the expansion of school inspections beyond lead in drinking water to include lead-based paint hazards. To date, virtually no attention has been given to lead paint hazards in schools. There is a strong probability that, just as in the home environment, the most intensive exposures in schools come from lead in paint and lead in surface dust from paint. It is essential that the public's attention be focused on the sources posing the greatest hazard.

At the same time, it is important to bear in mind that the segment of the population at greatest risk to the neurotoxic effects of lead is children under age six. For this reason, elementary schools and high schools housing children of older ages should rightfully be assigned lower priority. Day care centers for pre-school children present an especially high risk situation, both in terms of the age of the children and the possibility of multiple poisonings. The Alliance therefore would urge that consideration be given to placing greater emphasis on identifying and corrected lead hazards in day care centers.

Conclusion

The Alliance wants to commend this Committee for your leadership in the long battle to end childhood lead poisoning. H.R. 2840 is a vitally important piece of legislation. It takes a comprehensive approach; it addresses the most serious lead hazards in our home and other environments; and it begins to shift public policy from reaction to prevention.

The Alliance is pleased to endorse H.R. 2840 wholeheartedly and we urge its early consideration by the Energy and Commerce Committee and passage by the full House.

Mr. **Sikorski**. Thank you again, Dr. Jackson. I thank all of you and your constructive suggestions will be reviewed by the subcommittee.

The lead paint provisions of H.R. 2840 have three major components: first, a program for inspecting schools and day care centers, a program for licensing lead inspectors and abatement workers, and finally, a program for inspecting and disclosing lead paint hazards before the sale or rental of real estate. We will go through each of these.

First, is there general consensus regarding schools and day care centers, that the members of the panel support the provisions of H.R. 2840? Dr. Jackson?

Mr. **Jackson**. Yes.

Mr. **Sikorski**. And Mr. Gorman is yes?

Mr. **Gorman**. Yes.

Mr. **Sikorski**. Mr. Jones, do you have any objections on schools and day care centers being inspected?

Mr. **Jones**. I'm not opposed to the inspections. I'm concerned about what happens after you inspect.

Mr. **Sikorski**. Okay. And this is schools and day care centers.

Mr. **Jones**. I'm not an expert on schools and day care centers.

Mr. **Sikorski**. Miss Stern, that's your area; that's your baby. Do you want that?

Ms. **Stern**. The National Education Association thinks it is essential that we inspect and take action for abatement where there are problems in schools and day care centers.

Mr. **Sikorski**. Second, on the licensing of lead inspectors and lead abatement workers, is there general consensus? Miss Stern, is that a good idea?

Ms. **Stern**. Yes, sir, we believe in licensing and expertise in all areas of endeavor.

Mr. **Sikorski**. Mr. Jones, you're nodding your head yes. Mr. Gorman, do you agree?

Mr. **Gorman**. The accreditation of training providers and licensing of inspectors and deleaders is essential.

Mr. **Sikorski**. Dr. Jackson?

Mr. **Jackson**. I agree.

Mr. **Sikorski**. You agree as well.

The inspection disclosure requirements for home and apartments, do you like that, Dr. Jackson?

Mr. **Jackson**. Yes, I do.

Mr. **Sikorski**. Mr. Gorman?

Mr. **Gorman**. It's critical.

Mr. **Sikorski**. For your people, this is a big deal for you.

Mr. **Gorman**. It's critical. I mean, there is nothing else that will drive the necessary work.

Mr. **Sikorski**. Miss Stern, do you think this is important, too?

Ms. **Stern**. Yes.

Mr. **Sikorski**. Mr. Jones, this is your concern, so why don't you state your concern here.

Mr. **Jones**. I believe in our oral testimony I said that we were not opposed to disclosure, but I think our concern is, you know, what's the environment in which we do that disclosure. I'm not opposed to telling the people that live in my apartments what sort of environment they live in, but I'm not sure that this bill explains to me or the people of my industry exactly what will happen after we do that.

Mr. **Sikorski**. Let's see if we can work that stuff out before we leave and go on to the next panel.

The National Association of Realtors has indicated they support disclosure of known lead paint hazards. You support this, do you not?

Mr. **Jones**. Do I support the NAR position?

Mr. **Sikorski**. Yes.

Mr. **Jones**. I'm not sure what their position is.

Mr. **Sikorski**. Well, do you support that known lead hazards should be disclosed by a lessor, by a landlord?

Mr. **Jones**. I believe I said I'm not opposed to disclosure. However, I'm very concerned about what environment we disclose in. I mean, it's just like your water test.

Mr. **Sikorski**. I'm bothered now. Certainly, if you have a known hazard in an apartment, you have to disclose that under common law and under usually statute.

Mr. **Jones**. Well, we're talking about testing for lead-based——

Mr. **Sikorski**. No, I don't want to get that far. What I'm trying to do is plumb the difference here and figure out——

Mr. **Jones**. You're saying that if I knew that I had a hazard in my apartment, should I tell the tenant?

Mr. **Sikorski**. You have to tell the tenant.

Mr. **Jones**. Yes. I'm asking if that was the question.

Mr. **Sikorski**. Yes.

Mr. **Jones**. I would say yes.

Mr. **Sikorski**. And that's what the National Association of Realtors is saying as well, that if you know of a lead paint hazard, you have to disclose it to the buyer. You don't have any problems with that.

What about disclosure of potential lead hazards?

Mr. **Jones**. From what I've read in the HUD study on lead-based paint, my feeling is that there is not a clear distinction between lead-based paint and the avenues into the blood stream. If I have nondeteriorating lead-based paint in an apartment, I'm not convinced that that is a hazard. I believe that's exactly what the HUD report says.

So if I disclose that there is nondeteriorating lead-based paint in my apartment, I don't want that to be misunderstood as the announcement of a blatant hazard.

Mr. **Sikorski**. Let me follow this up. You are not convinced that lead-based paint is a hazard?

Mr. **Jones**. I'm saying that, from what I've read in the HUD report, there is not a clear distinction between lead-based paint, which is not deteriorating, which exists in a dwelling, and the presence of lead in the blood stream.

Mr. **Sikorski**. What about deteriorating lead-based paint?

Mr. **Jones**. I would agree that that is a hazard if it is ingested.

Mr. **Sikorski**. So you would support disclosure to incoming families that there is deteriorating lead-based paint and that there's a hazard if ingested?

Mr. **Jones**. In my State, any type of deteriorating paint is a violation of the statewide building maintenance code. And whether it contains lead or not, landlords in my State, where localities have adopted that code, would be required to remove the peeling paint.

Mr. **Sikorski**. I don't think there's much difference from where you are and where we are or want to be. Because if there's a known problem, it has to be disclosed. If there is a risk, it should be disclosed. The inspection component, which I understand you have some concerns with, that's the thing that eliminates the hysteria, the unnecessary alarm and the rest of it and allows your people, as well as tenants, to focus on the problems as opposed to a conceptual or potential problem and allows your resources to be triggered in an appropriate direction.

Mr. **Jones**. I would like to be sure that the people who receive the test information are as well educated and versed in the hazards of lead-based paint as I have become in the last week. I represent a landlord who thought that you chewed on the crib and you ate the paint and that was bad. I have become an instant expert in paint.

Mr. **Sikorski**. Even this morning, in sitting through this, you can pick up a lot of additional things, as we do each time we have a hearing.

Let me end on a point that you raised. You were concerned about liability, that if you have a test and you find out and who gets it and all the rest of it. I'm not going to give you any legal advice, any free legal advice or any other kind, but my understanding is that liability entails much more dramatically if you fail to do an inspection and incur a risk.

It seems to me that this approach, of inspection and disclosure, where appropriate, a reasonable system set out, minimizes liability. Failure to go that path with these kinds of things, the Newsweek article and Prime Time Live and all that, actually raise the liability pretty dramatically and spreads it so broadly because you're not focusing things down.

Mr. **Jones**. I would agree.

Mr. **Sikorski**. Thank you.

The gentleman from North Carolina, Mr. McMillan.

Mr. **McMillan**. Thank you.

I think a lot of us, including Members of Congress, have become much more aware of the problem in the last week, with the discovery of lead in the water pipes of these buildings.

Let me direct a few questions. Mr. Jones, have you or your association any notion of the cost it would take to meet the provisions of H.R. 2840 insofar as rental apartments are concerned in the United States? Has anyone attempted to ascertain that?

Mr. **Jones**. I think we have a lot of questions. For example, it's not clear, if you have a 100-unit apartment building, exactly what the testing requirements would be. Would you take 10 samples in each apartment, or would you take 10 samples in 3 to 5 out of 100? I believe the HUD report says that a sample would cost $50, and that in a single family home testing you're looking at maybe $300 to $350. So it's not clear to us exactly what the specific testing requirements would be, and we would certainly want to see very clear guidelines for each type of housing situation.

Mr. McMillan. I think in addressing the problem it should be accompanied by a serious addressing of what it's going to cost, both in the public and private sector, and a realistic means of achieving the funding of that effort; wouldn't that be your practical judgment?

Mr. Jones. Well, every dollar that anyone who owns a home or an apartment spends is obviously important. If you are going to be spending $300 a unit for $300 times 100, it certainly has a major impact on your business. If I were expected to get into that type of testing, I would need the resources to do it, most certainly.

Mr. McMillan. And presumably, to the extent that that's not borne by Government and is borne by the owners of rental property, then ultimately that's going to have to get passed on to the renters of rental property, is it not?

Mr. Jones. If you're in a market where you can do that, you pass it on. If you're not, you cut somewhere else.

Mr. McMillan. What do you mean by that? Do you mean from a competitive standpoint or from a rent control standpoint?

Mr. Jones. Deferred maintenance, you advertise less, you spend less, you look in your budget and say well, if I've got to spend this money, where do we go to where we can make cuts? The same thing with you and your budget. You make do with what you've got.

Mr. McMillan. Not very well.

I'm sure there are going to be rather significant costs in here for the Federal Government and the State governments as well, but I would expect the greater impact of this is going to fall upon the owners of the property, whether that's an individual or rental property.

Mr. Jones. I think the impact is going to be right on the owner. As Mr. Waxman has reported, the minute he got the test, he has written a letter to the architect. When my tenants get the test, I will get the letter and I will be asked what I'm going to do.

Mr. McMillan. This may not be exactly in your field, but I think the Environmental Defense Fund has estimated that perhaps as many as 3.8 million homes might be classified as a priority hazard and has estimated that as much as $240 billion would be required to rid them of lead.

Do you have any opinion about that or a perspective on that?

Mr. Jones. Just that it seems to be a staggering number of units.

Mr. McMillan. Does that surprise you, that it would be that many units?

Mr. Jones. I really don't have an opinion on that.

Mr. McMillan. I don't have very precise information as to what they used to back up that estimate, in terms of the nature of the hazard. But that's at least one estimate, and if anyone else has any other estimates, I think it's important that we try to understand them.

In your judgment, do you think that, whatever inspection or abatement program is undertaken, that they should be addressed in some manner by State and Federal tax laws in terms of funding the abatement of the problem?

Mr. Jones. I would certainly like to see that somebody help fund it. I know in my operations it would put a severe limitation on our ability to continue to provide or struggle to provide affordable housing. Our industry is under severe pressure now, and I think that has resulted in an enormous impact on the S&L industry, the banking industry. We really can't absorb many more hits. So I would certainly need help from the States or the Federal Government.

Mr. **McMillan**. The essential philosophy followed in the Clean Air Act and in other pieces of environmental legislation is to basically set the standards and, in effect, the cost of the solution gets built into the cost of the product or service that's being provided.

Mr. **Jones**. That's what has happened with asbestos. The standard is there. The known hazard is there. The cost is borne by the owners.

Mr. **McMillan**. Are there some things in terms of the way we approach the asbestos problem that would be instructive in the way we approach this? I don't mean the nature of the problem, but how we deal with the issue of not creating a bigger problem in some respect, which we may have done, and then the whole issue of liability that I think needs to be a part of both.

Do you have a perspective on that? Have you had to deal with the asbestos problem?

Mr. **Jones**. Yes, sir, most definitely.

Mr. **McMillan**. Are there some things that we could have done in that approach that may be instructive here?

Mr. **Jones**. I think right now the Health Effects Institute is just in the process of coming out with some new information about the effects of low-level exposure to asbestos and that it appears we may have greatly overreacted to those low-level exposure effects.

I think right now you can't undo what we did with asbestos. If I tell a tenant that I've got asbestos in the building—it happened to a friend of mine last year. A leaky pipe was discovered and the maintenance man went in, fixed it by removing the wrapping around the pipe, and he paid $6,000 to buy all of the belongings, all of the sheets, all the bedding, TV set, everything, and moved the tenant. That was 1 hour of exposure to some friable asbestos. I think that's strictly because we have turned asbestos into an enormous litigation nightmare. That is what I would like to avoid with the lead paint.

Mr. **McMillan**. Did you want to respond to that, Mr. Gorman?

Mr. **Gorman**. I did, Congressman McMillan. There are two things I would like to say about it.

This bill does some of the things that the AHERA legislation did not do. You have taken into account some of the failing in that earlier legislation by allowing or requiring the Secretary, or whatever administrator becomes the administrator for these provisions, to come up with a report on abatement practices, on the necessary equipment and so on, to be made to Congress within a year after enactment of the legislation. I think that's a very responsible way to go about it, and it was not present in the AHERA legislation.

I would also like to respond to some earlier suggestions, that this industry is not capable of responding to the needs that lead inspections and lead abatement will bring. In fact, those same dire prognoses I think were made with asbestos and they were found not to have been borne out over time. Moreover, the industry and the infrastructure that already exists on asbestos is certainly ready, willing and able to come to grips with the lead problem.

Mr. **Waxman**. Thank you, Mr. McMillan.

Dr. Jackson, you're the medical expert on this panel. I think that asbestos legislation is important legislation, but can you give us a comparison of the asbestos problem to the lead problem in terms of public health?

Mr. **Jackson**. Yes. As a matter of fact, Mr. Waxman, I would quickly say that time goes a little bit slower in Atlanta than it does here in Washington, and my 5 minutes went very, very rapidly. There are some things that I didn't say, and it goes along with what has been said about the asbestos problem and the lead problem and trying to relate the two.

I would like to say that in lead we see most of our problems, particularly neurotoxic problems, or central nervous system problems, brain problems, problems or functions as a result of damage occurring in that period of time while the brain is developing most rapidly. That's in the first 4 to 6 years of life. Whatever we do, I think we need to be certain that—and this may get away a little bit from asbestos because it causes a different kind of problem—but we need to, as a first priority, get into those day care centers, get into those schools, because that's where we are going to have neurotoxic problems. It is quite different from the asbestos problem, which might affect any or all different ages.

Mr. **Waxman**. In terms of the magnitude of the problem, do you have any sense of——

Mr. **Jackson**. I can't give you the magnitude of the problem because I don't know the asbestos problem to the degree, as in the case of the lead problem.

Mr. **Waxman**. Mr. Gorman.

Mr. **Gorman**. I can respond with respect to the impact of asbestos on our members and, to some extent, to lead.

I think, in terms of the adult population, asbestos was a bigger issue, is a bigger issue. We know that 10,000 construction workers a year are dying from their previous exposures to asbestos. But we know that with respect to our members' families, that lead is probably a bigger problem. For that reason, I'm not sure what gain there is in saying which is the bigger, but I think they're both absolutely huge.

Mr. **Waxman**. The dollar figures that Mr. McMillan cited and attributed to the Environmental Defense Fund was greeted by nods of the head in the negative by people here from the Environmental Defense Fund.

Mr. **McMillan**. I don't recognize them.

Mr. **Waxman**. At any rate, I think we ought to have more information as to what the cost estimates might be, and perhaps we can hold the record open and see if the Environmental Defense Fund has an estimate. I think HUD has an estimate and that maybe is the one you cited. But when we talk about costs for what we're requiring to be done to deal with lead, we can also talk about the costs to our society for the children that are going to be brain damaged because of lead exposure. I think the cost benefit analysis of that expenditure of money to deal with the lead problem is going to clearly show that we come out way ahead in terms of society's interest.

Mr. **McMillan**. If the chairman would yield, my purpose in raising it was not to suggest we shy away from dealing with the problem but was to have a realistic estimate of what it would take to solve the problem.

Mr. **Waxman**. I certainly understand. And I think we have to look at those costs.

The Centers for Disease Control, I am informed, has estimated about $50 billion to clean up, and about $100 billion in benefits. If we could just put numbers on what it would mean for a child who is brain poisoned because of lead exposure. But these are important considerations.

Miss Stern?

Ms. **Stern**. We have a number here from Dr. John Rosen, chairman of the advisory committee that is working on the CDC and EPA cost benefit analyses, and we have an estimate that says an annualized benefit of at least $4.2 billion in terms of the medical and societal savings from abating these hazards to children.

I am struck, for example, by the similarity in the numbers that we hear here, that in an inner city area, for example, 55 percent of the students may, in fact, be adversely strongly affected by lead. Then I know that in our inner city in Maryland, in Baltimore, 48 percent of the 9th graders do not make it through the 12th grade to graduate. I am struck by the fact that we have a statistic that says 17 percent of children may be adversely affected by lead in their intellectual development, and that the percentage of 16 to 24 year olds in this country who are neither in school nor have graduated is 14 percent.

These numbers are eerily close together. I know as a teacher that there is really nothing that we can do to reverse these effects and that the cost of special education can be two, three, five, eight times in trying to compensate for——

Mr. **Waxman**. It's not just special education to try to remedy the problem, but if we're talking about school dropouts and people who are going to be on welfare and on Medicaid, in prison, on and on—not that this is the only reason for all of those things—but it is something that our society can't continue to just hope will get better by itself.

We clearly have problems to work out, to be fair in how we deal with letting consumers know, requiring the clean up of the lead problem, and these are details that are quite significant. They are going to require costs. We need to work very carefully together to fashion what is a responsible approach. I am certainly going to look forward to working with my colleagues to accomplish that result. Each of you have given us very helpful testimony and I appreciate your being here.

We have one more panel, but we're going to recess now until 1:45. We will then meet in this room again to complete the testimony.

[Whereupon, at 12:40 p.m., the subcommittee was recessed, to reconvene at 1:45 this same day.]

AFTER RECESS

Mr. **Waxman**. The meeting of the subcommittee will come back to order.

I would like to now call forward Erik D. Olson, counsel, environmental quality division, National Wildlife Federation; Dr. L.D. McMullen, general manager, Des Moines Water Works, on behalf of the Association of Metropolitan Water Agencies; William F. Parrish, Jr., program administrator, water supply program, Maryland Department of the Environment, on behalf of the Association of State Drinking Water Administrators; Jeffrey Wennberg, mayor, Rutland, Vt., on behalf of the National League of Cities; and Terry Gloriod, chairman, water technology committee, National Association of Water Cos.

We are pleased to welcome you to our hearing today. Your prepared statements will be made a part of the record in full. We would like you to limit your oral presentation to no more than 5 minutes.

Mr. Olson, why don't we start with you.

STATEMENTS OF ERIK D. OLSON, ON BEHALF OF NATURAL RESOURCES DEFENSE COUNCIL, AND FRIENDS OF THE EARTH; L.D. McMULLEN, CHAIRMAN, LEGISLATIVE COMMITTEE, ASSOCIATION OF METROPOLITAN WATER AGENCIES; WILLIAM F. PARRISH, JR., ON BEHALF OF ASSOCIATION OF STATE DRINKING WATER ADMINISTRATORS; JEFFREY WENNBERG, ON BEHALF OF NATIONAL LEAGUE OF CITIES; AND TERRY GLORIOD, CHAIRMAN, WATER TECHNOLOGY COMMITTEE, NATIONAL ASSOCIATION OF WATER COS.

Mr. **Olson**. Thank you, Mr. Chairman. I am Erik Olson with the National Wildlife Federation. I am representing NWF as well as the Natural Resources Defense Council and the Friends of the Earth, who in toto comprise over 5.5 million people concerned about the Nation's lead poisoning problem.

We support H.R. 2840. It goes beyond the empty strategies that we have seen floating around without any results. We support screening provisions and, indeed, believe that universal screening is ultimately going to be necessary. But, most importantly, we support a renewed war on lead poisoning to end the national disgrace that has befallen the United States. The bill would attack lead paint and dust as well as lead in drinking water.

We also support the bill that you, Congressman Waxman, and Mr. Cardin and others have proposed, H.R. 2922, which would create a lead trust fund to deal with lead abatement indoors.

We will focus our primary attention on lead in drinking water. I wanted to call to the committee's attention a recent report that came out of EPA that has not received much publicity. It came out after the hearing of last April that you held. Among other findings in this report, which is the final regulatory impact analysis for the lead rules, are some of the following staggering statistics:

For example, over 23 million children in the United States, according to this document, have decreased IQ from drinking water; that's 23 million children with decreased IQ from drinking water. Most of these kids have decreases of less than one point according to this report. However, a full 17,000 or more lost a full IQ point or more. Indeed, hundreds, if not thousands, lost over five IQ points as a result of drinking water contamination.

In addition, EPA estimated that over 685,000 cases of hypertension occur in men, without considering women's impacts. Over 850 heart attacks, including 650 fatal heart attacks, were caused from lead in drinking water, and over 650 strokes occur annually. These are all per year.

What this tells us is that the costs of inaction are staggering and that the benefits of acting swiftly are enormous. Today, about 20 percent of our national lead exposure, on average, is from drinking water, but soon it will be approximately 50 percent, according to EPA studies.

We agree that, generally, acute poisoning is caused by lead paint and other sources, but there are cases of acute poisoning from drinking water, especially with infants.

Unfortunately, the EPA rules that have been issued on lead in drinking water, as the chairman has recognized, are not cause for celebration. While we see practically swat teams invading the Vice President's house, we will see significant delays before the rest of the American public will be protected from lead in drinking water under the current rules.

A review of the provisions of H.R. 2840 suggest that we will see significant improvement in this. The bill would eliminate EPA's action level of 15 parts per billion that only applies to a portion of the public and will, instead, substitute a standard of 10 parts per billion with 100 percent applicability. We strongly support this measure.

We also support, however, a slight change in the bill that would establish a 10 part per billion standard at the tap, for which there is no defense except that a corrosion control plan was in place and complied with in a lead service line program that was in place and complied with, that that standard would be immediately enforceable within 2 to 3 years, which would have the effect of encouraging both States and the utilities to move quickly in putting corrosion control and lead service line programs into place. We also support the expedition of the corrosion control and lead service line replacement provisions in the bill.

In addition, we would urge the committee to consider adding a provision here which would encourage water systems to voluntarily pay for lead plumbing removal in people's houses and then to bill people on their water bill. This was discussed briefly this morning, but we feel that putting something in the bill that would encourage it, not necessarily require it but encourage it, would take a step towards helping home owners that want to do something about lead in their homes to remove it and affordably pay for it on their water bill.

The bill also toughens the lead pipe fittings and solder requirements. We support toughening these, but we believe there should be essentially a presumption that there will be no lead in any fittings or solder until it is proven that the lead is necessary and that it will not cause a violation.

In conclusion, we commend you, Mr. Sikorski, and Chairman Waxman, on your leadership on this issue and on attempting to end the national disgrace of lead poisoning.

[Testimony resumes on p. 546.]

[The prepared statement of Mr. Olson follows:]

TESTIMONY OF
ERIK D. OLSON
NATIONAL WILDLIFE FEDERATION
ON BEHALF OF THE NATIONAL WILDLIFE FEDERATION, NATURAL RESOURCES DEFENSE COUNCIL, AND FRIENDS OF THE EARTH

Chairman Waxman and distinguished members of the Subcommittee, I am Erik D. Olson, Counsel for the Environmental Quality Division of the National Wildlife Federation (hereinafter referred to as "NWF" or the "Federation"). The Federation is the nation's largest citizen environmental organization, with over 5.5 million members and supporters nationwide. NWF carries out a broad array of education and advocacy programs intended to promote the protection of the environment and public health. The Natural Resources Defense Council (NRDC) is a leading advocate of the protection of public health and the environment through sound science and law. Friends of the Earth is a global environmental organization dedicated to the protection of human health and the planet. We appreciate this opportunity to testify regarding H.R. 2840, the Lead Contamination Control Act Amendments of 1991.

This legislation would revise and extend the program for the prevention of lead poisoning by taking the important step of increasing the available grants for screening infants and children for elevated blood lead levels. The bill also would begin a direct war on lead from two of the major sources of exposure to lead in the environment: (1) lead paint and lead hazards at residential dwellings, schools and day care centers; and, (2) lead in drinking water.

Today, we will focus our comments primarily upon lead in drinking water and related provisions of the bill, and will leave for others detailed discussion of lead paint and other indoor lead hazards. However, we strongly support the bill's provisions to address these other lead hazards. As a nation, we can no longer afford to eliminate only "pet sources" of lead; only a comprehensive strategy designed to reduce and ultimately eliminate lead exposure will end the national disgrace of widespread lead poisoning of Americans, especially our children.

For example, the legislation takes the critically-needed action of requiring lead inspectors and abatement contractors to be trained and certified, and to comply with federal criteria in removing lead hazards. The bill also requires disclosure of lead hazards upon the sale or lease of residential property, and mandates disclosure of lead hazards at schools and day care centers. Moreover, FDA would be directed to improve the control of lead in packaged food and ceramics.

We support all of these requirements as important first steps in the war on the lead poisoning of American children and adults. We also support H.R. 2922, which was recently introduced by Chairman Waxman, Mr. Cardin, and several of your colleagues, which would create a trust fund paid for by fees on the lead industry, to abate indoor lead hazards. We believe, however, that ultimately universal screening of all children and infants for lead poisoning (as is now required in Massachusetts) is needed on the national level.

OVERVIEW AND SUMMARY OF THE LEAD PROBLEM

Lead contamination of the indoor environment is not a new problem. Shockingly, however, generations after lead was recognized as a poison, it remains a widespread and sometimes acute public health threat. Lead paint and dust, and lead in drinking water are the major indoor sources of lead exposure today.[1] Researchers recently have documented that decreased IQ and other problems are caused by low level lead exposures at concentrations which were thought to be safe just a few years ago.

Yet in the face of this and other evidence, EPA has been extremely slow to redress one of the most readily controllable sources of lead exposure: lead in drinking water. In 1986, Congress mandated that EPA improve its outdated lead in drinking water regulations (originally promulgated in 1975) no later that June of 1989.[2] The Agency had to be dragged into Court to get the lead rules out. Finally, under a court-imposed deadline, the rules were published on June 7, 1991.[3]

Unfortunately, as Chairman Waxman has observed, the issuance of EPA's rules are not cause for celebration. These rules clearly will be inadequate to solve the lead-contaminated drinking water problem, and NRDC has recently challenged them in the United States Court of Appeals for the District of Columbia Circuit.[4] EPA's rules will cause even further delays in public health protection for what the Agency estimates are 130 million Americans who drink water containing lead.[5]

---

[1] U.S. EPA, Strategy for Reducing Lead Exposures, ("Final Draft," September 26, 1990).

[2] Safe Drinking Water Act section 1412(b), 42 U.S.C. section 300g-1(b).

[3] 56 Fed. Reg. 26,460 et seq.

[4] Natural Resources Defense Council v. U.S. Environmental Protection Agency, No. 91-1343 (D.C. Cir., filed July 22, 1991).

EPA's new rules eliminate the current "at-the-tap" standard of 50 parts per billion Maximum Contaminant Level (MCL) for lead. Instead, the new rules will replace this enforceable standard with a requirement that each public water system (PWS) implement a state-issued "optimal corrosion control" plan, if the PWS exceeds an "action level" of 15 ppb in more than 10 percent of the taps tested.[6]

EPA, the states, and citizens who are supplied with lead contaminated water, likely will find it difficult or impossible to enforce this rule. There will no longer be an enforceable at-the-tap standard, and there will be no national optimal corrosion control program for EPA and citizens to enforce. The new rules also will unnecessarily delay the reduction or elimination of lead in drinking water for several years, and in some cases for decades.

This approach was adopted even though EPA analyses indicate that the annual health benefits (such as reduced medical treatment and less remedial education for lead-poisoned children) from a serious reduction in drinking water lead levels far outweigh the costs of such reductions. For example, EPA data indicate that the adoption of an MCL of 10 parts per billion lead will yield health benefits ranging from $1 billion to $6.3 billion, and that the costs of implementing this MCL would be just $350 million per year.[7] These costs do not include the hundreds of millions of dollars that would be saved by reducing pipe corrosion and reduced distribution system maintenance.[8] Thus, EPA's new approach will unnecessarily permit at least one more generation of American children to suffer from the toxic effects of lead in drinking water.

---

[5] Fact Sheet: National Primary Drinking Water Regulations for Lead and Copper, page 3 (May, 1991)(EPA rules are expected to "reduce the exposure of approximately 130 million people to lead in drinking water.").

[6] Supposedly, the water systems are required to test water at dwellings at relatively high risk of lead contamination. However, limitations on available information on lead service lines and lead plumbing in homes may make such targeting very difficult.

In addition, loopholes in the Safe Drinking Water Act and the Lead Contamination Control Act, and ineffective EPA and state implementation of those laws, permit continued sale and installation of lead-containing pipes, faucets, solder, and other fixtures that are used to supply drinking water. Congress should close these loopholes.

---

[7] EPA Office of Drinking Water, "Information Briefing: Final Rule for Lead and Copper in Drinking Water, for Deputy Administrator," (January 31, 1990); see also, U.S. EPA, Office of Drinking Water, Final Regulatory Impact Analysis of National Primary Drinking Water Regulations for Lead and Copper, (April, 1991)(finding that the costs of all treatment technique rules considered, including rules more stringent than adopted by EPA, would likely be significantly less than the benefits in terms of public health protection).

[8] Ibid.

A REVIEW OF H.R. 2840

Lead Contamination Limits at the Tap, Corrosion Control, and Lead Service Line Replacement.

As drafted, H.R. 2840 would establish an MCL for source water of 5 ppb lead, and would establish a "tap water lead limit" of 10 ppb, which would trigger requirements for PWSs to control corrosivity of their water and to remove their lead service lines. The bill would reinstate the old 50 ppb MCL for lead at the tap immediately, so that there would be no relaxation of current rules while we are waiting for the corrosion control and lead service line requirements to kick in.

While the bill goes a long way towards improving EPA's rules, we believe that it should be modified to clarify that the 10 ppb tap water lead limit is enforceable beginning 24 to 36 months after enactment, and that a PWS has an affirmative defense to enforcement of this tap water limit only if it demonstrates that: (1) it is in compliance with an approved optimal corrosion control plan; and (2) it is in compliance with an approved lead service line replacement program.

While the difference between this proposed approach and that in the bill may appear small, adopting the approach of requiring the system to demonstrate that it is in compliance with approved corrosion control and lead service line replacement programs has a major advantage over the current bill's approach. Our proposal would discourage PWSs (and states) from foot dragging in developing and approving these plans.

The legislation as drafted would require lead service line removal to start within 6 months after a violation of the tap water lead limit (irrespective of whether a corrosion control plan is in place). This should help to provide some incentive for PWSs to comply with the corrosion control requirements, because the costs of service line removal are expected to be significant, and installation of corrosion control measures may obviate the need for service line replacement. However, many systems (especially those with relatively few lead service lines) may be willing to begin removal of their service lines while dragging their feet in developing or seeking quick approval of a corrosion control program. Therefore, having an enforceable tap water lead limit for which compliance with approved corrosion control and service line removal programs is the only defense, would better assure expeditious implementation of these programs.

The bill as drafted also does little to encourage homeowners to remove lead plumbing in their houses. We urge that a provision be added to the legislation requiring EPA to develop a model program encouraging (but not necessarily requiring) PWSs to pay for lead plumbing replacement in homes, to be paid for over a significant time period by the property owner on their water bills. States should also be required to develop such programs. Similar programs have been successful at encouraging homeowners to buy efficient furnaces and other major appliances when utilities pay for their installation, and then bill the consumer through their utility bills.

Lead Plumbing, Fittings, Fixtures, Solder, and Flux.

H.R. 2840 would begin to close the loopholes in current laws by requiring more stringent lead plumbing, fittings, fixtures, solder, and flux requirements. However, the bill should be modified to mandate a national ban on all lead plumbing, fittings, fixtures, flux, and solder. If an outright ban cannot be achieved immediately, at a minimum there should be a rebuttable presumption against the manufacture or sale of any such product that contains any lead. A company should be allowed to overcome this rebuttable presumption only if the company provides compelling evidence, in a petition to EPA, that: (1) the product cannot, through substitution of materials or manufacturing processes, be produced without lead; and (2) that the product will not cause water to be contaminated with more than 10 parts per billion (ppb) lead after sitting with corrosive water for 10 hours.

While H.R. 2840 would require EPA to toughen the lead plumbing and related rules, it should be amended to include the rebuttable presumption approach suggested above. The legislation also should be amended to strike the provision (in the bill's amendments to section 1417 of the SDWA) allowing manufacturers to test whether their plumbing products cause lead contamination of water after the product has been in use for a month. The highest lead contamination of water generally occurs in the first 30 days of use, and young children, infants, or pregnant women may be using the water during that time.

Letting the Water Run Is Not a Long-Term Solution

The EPA rule and the legislation both encourage consumers to run their water to reduce lead levels before drinking or cooking with it. While this may be a short-term fix, the public notice provisions of the bill should be revised to emphasize that this is only a temporary solution that may exacerbate drought conditions and cause unnecessary waste of water and wastewater treatment capacity if viewed as a long-term solution. Consumers also should be encouraged to have their water tested before they run their water to eliminate lead, because they may be unnecessarily wasting this precious resource. Other alternatives, including use of bottled water, point of use devices, and lead plumbing and fittings replacement, should be mentioned.

Other Important Drinking-Water Related Provisions of the Bill

H.R. 2840 also includes certain other important and badly-needed improvements in the drinking water rules. For example, the bill assures that drinking water records on file with the states must be made available to the public, opens up the process of approving corrosion control programs to public review and comment, and clarifies and improves enforcement authorities.

The bill also makes it clear that the impacts of corrosion inhibiters upon the environment must be considered when the water reaches the treatment plant and receiving waters. We urge the Committee also to provide in section 1418C(i) that EPA's rules must specifically approve any corrosion inhibiter that may be used, after a review of the toxicological and other data available on their impacts on human health. These reviews of corrosion inhibiters should be repeated every three years.

THE HEALTH EFFECTS OF LEAD EXPOSURE

Recent research indicates that lead in children's blood, at levels once thought to be safe, can cause neurological and behavioral problems, including decreased I.Q., reduced attention span, and impaired verbal and auditory capacity.[9] Children appear to be especially susceptible to problems caused by low level lead exposure. Children's bodies readily accumulate lead and are more vulnerable to certain toxic effects of this injurious metal.[10] There is mounting evidence that these neuropsychological impacts may be irreversible, persisting for many years after exposure, at least into young adulthood.[11] The Centers for Disease Control is expected to adjust its definition of lead poisoning from 25 micrograms of lead per deciliter of blood (25 ug/dl) to about 10 ug/dl, to reflect this rapidly accumulating recent evidence.[12]

---

[9] Needleman, H.L., and Gatsonis, C.A., "Low Level Lead Exposure and the IQ of Children: A Meta-Analysis of Modern Studies," Journal of the American Medical Association, Vol. 263, No. 5, pp. 673-78 (February 2, 1990); Needleman, H.L. et al., "Long Term Effects of Exposure to Low Doses of Lead in Childhood: An 11-Year Followup Report," New England Journal of Medicine, Vol. 322, No. 2, pp. 83-88 (January 11, 1990).

[10] Brett, S.M., and Wilcock, K.E., "A New Look at Lead: Does it Affect the Way Our Children Think and Behave?" ENVIRON Report (Winter 1991).

[11] Needleman, H.L. et al., "Long Term Effects of Exposure to Low Doses of Lead in Childhood: An 11-Year Followup Report," New England Journal of Medicine, Vol. 322, No. 2, pp. 83-88 (January 11, 1990).

Despite this clear evidence of the adverse health effects of lead exposure at low levels, the Office of Management and Budget has questioned even EPA's extremely modest efforts to begin thinking about reductions in lead exposure. This is a matter in which OMB has no expertise. OMB should not delay or encumber EPA actions intended to address the serious health threats posed by lead.

Health Effects of Lead in Drinking Water

Since the days of the Roman Empire, when many aqueducts were lined with lead, this highly malleable metal has been used to transmit drinking water. Lead contaminates many drinking water supplies when corrosive water leaches lead from pipes, solder, or other conduits. EPA estimates that approximately 130 million or more Americans drink water containing lead.[13] In 1988, the Centers for Disease Control has estimated that 6.6 million children of the ages 5-13 are potentially exposed to lead in their home drinking water supply.[14]

---

[12] See, e.g., U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, "Minutes for the Second Meeting, Advisory Committee on Childhood Lead Poisoning Prevention," (November 1-2, 1990).

[13] Fact Sheet: National Primary Drinking Water Regulations for Lead and Copper, page 3 (May, 1991).

[14] CDC, Agency for Toxic Substances Disease Registry, The Nature and Extent of Lead Poisoning in Children in the United States: A Report to Congress, p. 8 (1988).

More recently, EPA has estimated that substantially more children are affected by lead in drinking water. In an April, 1991 study, EPA estimated that over 23 million children have had their IQ decreased by lead in drinking water.[15] Although most of these children's IQ loss was relatively small, over 17,000 children lost a full IQ point or more, and hundreds lost over 5.7 IQ points from lead in drinking water.[16] Moreover, EPA estimated, lead in drinking water causes in excess of 685,000 cases of hypertension, over 850 heart attacks, over 650 strokes, and more than 650 deaths from heart attacks.[17]

Since EPA has substantially restricted the use of lead in gasoline and national blood lead levels have fallen, lead in drinking water has emerged as a leading continuing source of lead in Americans' blood stream. Relative to lead paint, few acute poisonings from lead in drinking water have been documented, although some cases have been reported. However, this Subcommittee heard testimony on April 26 from Dr. John Graef, head of the lead poisoning clinic at Children's Hospital in Boston (and who is affiliated with Harvard Medical School), who reported that he has had several infants as patients who were acutely poisoned by lead in their formula made with lead-contaminated drinking water.

---

[15] EPA Office of Drinking Water, Final Regulatory Impact Analysis of National Primary Drinking Water Regulations for Lead and Copper, page 5-44, Exhibit 5-19 (April, 1991).

[16] Ibid.

[17] Ibid at 5-40, Exhibit 5-17.

Indeed, there is extremely widespread exposure to lead in drinking water, and EPA scientists estimate that in the 1990's, drinking water lead contamination will account for approximately 50 percent of average national lead exposures and blood lead levels.[18]

EPA's INACTION REGARDING LEAD IN DRINKING WATER.

Sixteen years ago, EPA issued an MCL for lead of 50 parts per billion.[19] This standard has been widely recognized as inadequate to protect public health, as EPA itself tacitly has admitted in proposing an MCL Goal (a health-based protective standard) of zero lead and in proposing an action level of 15 ppb. Furthermore, EPA has applied this already extremely weak standard to "free flowing" water, allowing a public water system to test the water for lead after it has been allowed to flow for several minutes. Since the highest levels of lead generally occur within the first few minutes of the flow (because sitting water leaches lead from pipes and fixtures), EPA's unlawful interpretation of the rule obscures the significance of this issue by sweeping the lead problem under the rug.

Running water for many minutes before using it also is an extremely wasteful use of a valuable resource already in short supply. It is clear, in any event, that few people allow their water to run for several minutes before using it for drinking water, coffee, or baby formula. This is part of the reason why 130 million Americans are getting lead in their drinking water.

---

[18] Levin, R., M.R. Schock, and A. Marcus, "Exposure to Lead in U.S. Drinking Water," 1989 Trace Substances in Environmental Health, pp. 319-344 (ed. Hemphill, 1989).

[19] 40 C.F.R. section 141.11.

EPA repeatedly has promised that it will toughen its standard for lead in drinking water. In 1988, for example, EPA announced to this Subcommittee that reducing lead exposure through the adoption of a tough new drinking water rule "is among EPA's highest priorities" and that "we hope to promulgate the final rule by the end of the year [1988]."[20] Unfortunately, it was not until three years later in June of 1991, that this reduction finally was promulgated. Moreover, the rule that EPA plans to adopt fails to address the problem and will cause many years of delays in protecting the public from lead-contaminated drinking water.

EPA's approach in the new lead rule is to completely eliminate any enforceable MCL for lead, and to instead adopt a "treatment technique." This directly violates section 1412 of the Safe Drinking Water Act, which requires EPA to adopt an MCL enforceable at the tap unless it is not feasible to measure the concentration of the substance in drinking water (as in the case of viruses). Only if it is not feasible to measure the contaminant in drinking water may a treatment technique be specified. EPA openly admits that it is feasible to measure lead in tap water, but refuses to issue an MCL, even though the

---

[20] Statement of Michael B. Cook, Director, EPA Office of Drinking Water, July 13, 1988, p. 11.

Agency's internal analyses demonstrate that an MCL of 10 ppb is feasible.[21]

The new rule will require PWSs that exceed an "action level" of 15 ppb (in more than 10 percent of the taps required to be tested) to implement "optimal corrosion control" measures; all systems serving more than 50,000 people would have to adopt these measures. These corrosion control programs would be imposed by the states with minimal federal guidance. Thus, if a state fails to impose a corrosion control program for a PWS, or if it requires a PWS to implement an inadequate program, in most cases EPA and citizens would have little if any real recourse under the rule, no matter how serious the lead contamination problem.[22] Furthermore, if a state-issued corrosion control plan theoretically is adequate, it is unclear what would happen if a PWS fails to comply with that state-issued plan. For example, it is not clear that EPA or citizens would be able to sue the PWS under the Safe Drinking Water Act to enforce compliance with the plan.

Another grave concern under the EPA rule is the substantial delay associated with achieving compliance. Water systems are given from six to eight years to demonstrate full compliance with the corrosion control program. In addition, if the corrosion control plan is not sufficient to reduce lead levels, PWSs will be given up to 15 additional years to remove lead pipes from their distribution systems. Many Americans will have to wait for nearly 25 years--until the year 2015--to be supplied with water that contains what EPA considers acceptable lead levels. OMB reportedly opposed even this very limited lead pipe replacement program. OMB's position is particularly difficult to fathom since the benefits of removing lead service lines exceed the costs, and since even the water utility industry has publicly supported lead service line replacement if corrosion control is not working.

---

[21] Memo from Lawrence Jensen, Assistant Administrator for Water, "Level 1 Options Selection: Lead-Proposal of Maximum Contaminant Level Goals (MCLGs) and National Primary Drinking Water Regulations (NPDWRs)," (September 29, 1987); EPA Office of Drinking Water, "Information Briefing: Final Rule for Lead and Copper in Drinking Water, for Deputy Administrator," (January 31, 1990)(attached).

[22] A provision in the rule allowing EPA to review state corrosion control plans is so onerous and resource-intensive for EPA that it is unlikely to have a significant impact on EPA's ability to assure the adequacy of state corrosion control plans.

The rule requires most PWSs to use corrosion control only if more than 10 percent of the tested taps exceed the "action level" of about 15 ppb. The 15 ppb action level is not sufficiently protective of public health, particularly in light of recent CDC actions indicating that lead in blood at 10 ug/dl is an indication of lead toxicity. In addition, because of the way the action level will be applied (using a "90th percentile" rule), a substantial portion of a utility's customer base may be served lead-contaminated water with no limit on the extent of exposure in those homes.[23] This too is a direct violation of the Safe

---

[23] As noted earlier, the rule supposedly requires relatively high-risk dwellings to be tested, so in theory, fewer than 10 percent of the system's customers would be drinking water with lead levels in excess of 15 ppb for the corrosion control and service line replacement requirements to be triggered. However, limitations on available information regarding where lead

Drinking Water Act, which in sections 1401 and 1412 make it clear that all of a PWS's consumers are to be protected. Many thousands of children could be inadequately protected under EPA's action level.

In addition, the rule includes a provision enabling larger utilities to evade any additional requirements if they already have a corrosion control program. This raises crucial legal questions and may open the door to a Pandora's box of demands for exceptions which eviscerate the rule.

Rather than allowing EPA to twist beyond recognition the intent of the Safe Drinking Water Act, Congress should adopt an MCL of 5 ppb in free flowing water, with a 10 ppb MCL for first draw water, through minor modifications of H.R. 2840 as proposed above. This standard is readily achievable, easy to enforce, and is more protective of public health than EPA's current approach. Congress should swiftly adopt such a standard.

In addition to mandating this MCL, Congress should close the loopholes in the Safe Drinking Water Act and the Lead Contamination Control Act that allow lead-containing pipe and lead fittings to remain on the market. Specifically, the eight percent maximum lead content limit in fittings and pipes, and 0.2 percent limit on lead in solder, which are applicable to plumbing connected to PWSs (pursuant to section 1417 of the Safe Drinking

---

plumbing and lead service lines exist may make targeting of high-risk dwellings difficult or impossible. In any event, it is clear that under EPA's rule, some homes may continue to receive water with excessive and dangerous levels of lead, forever, without any legal recourse under EPA's rule.

Water Act), should be reduced to zero percent lead. EPA investigators have found that lead-free pipe and fittings are now on the market and are feasible to manufacture, so a zero standard could be quickly phased-in. In addition, as proposed above, lead solder and flux also should be banned. This lead ban should be a mandatory component of all state drinking water programs, and should be enforceable by EPA, states, and citizens.

Conclusion

For generations, lead has been recognized as an important health threat. Recent evidence shows that nationally, we must do more to reduce the levels of lead exposure of the public. We must take particular care of our children. We can initiate this process by adopting strict requirements that limit lead in drinking water and by banning lead in pipes and plumbing fixtures. The only way to ensure the safety of current and future generations of Americans is through a comprehensive control of all major sources of lead exposure, including lead paint, lead dust, airborne lead, lead in consumer and other products, and lead in drinking water. H.R. 2840 takes major strides towards accomplishing that goal.

Mr. SIKORSKI [presiding]. Thank you, Mr. Olson.

Dr. McMullen, General Manager, Des Moines Water Works, on behalf of the Association of Metropolitan Water Agencies. Welcome. You have 5 minutes to do with what you want.

STATEMENT OF L.D. McMULLEN

Mr. McMULLEN. Thank you very much. Good afternoon.

I am L.D. McMullen, general manager of the Des Moines Water Works in Des Moines, Iowa. I am also chairman of the legislative committee of the Association of Metropolitan Water Agencies, or a short cut is AMWA, which is made up of basically publicly owned water utilities around the Nation. I am here to speak basically on behalf of that association.

I am pleased this afternoon to be ale to share with you five views that the association has on the lead contamination control bill, H.R. 2840. But first, I am pleased that H.R. 2840 recognizes the problems of placing a maximum contaminant level at the customer's tap for lead and instead uses a tap water lead limit.

We also support within the bill the control of lead in source water, the diagnostic first draw testing, a treatment technique for corrosion control, and a public education program.

The first view that I would like to share this afternoon deals with the tap water lead limit. The bill requires action if any sample under a worst case situation exceeds the tap water lead limit. This one sample trigger does not take into account allowances for sampling error, use of illegal solder, leaching of brass faucets and fixtures, improper grounding of electrical or telephone circuits, which can, by themselves, cause lead levels in excess of 10 parts per billion.

It would seem to be in the best interest of the public to use resources for the protection of public health to determine the cause and correct that, rather than to jump to a conclusion with one trigger sample.

The second point deals with the time frames allowed in the bill that are extremely tight for large water systems: 6 months for sampling, 12 months for corrosion control studies, 16 months for States to determine optimum corrosion control, and 14 months for utilities to install and operate optimum corrosion control. If EPA or the States are slow in response, the utility is held responsible. We would rather see a daisy chain approach with each accountable for their own parts contained in the bill.

The third point has to do with the lead service line replacement. The time schedule allowed for replacement also needs to be given severe consideration. AMWA has consistently recommended that States, in conjunction with local water supplies, designate an enforceable schedule for each system based on size of the system, number of lead services, location of the lines, complexity of replacement, magnitude of lead level exceedance measurements, all reviewed and approved by EPA. We appreciate within the bill, though, the recognition of the problem of large systems by granting them additional time for replacement.

Four, control versus ownership. The water supply community has always defined the term "control" to mean ownership. This bill defines control differently and places significant additional financial and legal responsibilities on water suppliers.

Finally, the fifth issue deals with the Safe Drinking Water Act reauthorization items. The bill requires all existing rules using PQL's to set MCL's. The significance of this provision cannot be overstated. Its ramifications are far reaching and deserve careful consideration during reauthorization of the Safe Drinking Water Act.

We also feel the issues of classes of public water systems, action levels, citizen suit provisions, are more appropriate with reauthorization of the Safe Drinking Water Act than the lead contamination control bill.

I would like to thank the subcommittee for working with us on this very important issue and welcome the opportunity to continue to work with the subcommittee on this and other Safe Drinking Water act issues.

This concludes my remarks. I will be happy to answer any questions.

[The prepared statement of Mr. McMullen follows:]

Association of Metropolitan Water Agencies
Before the Subcommittee on Health and the Environment
Committee on Energy and Commerce
U. S. House of Representatives

Statement Presented July 26, 1991

Good morning Mr. Chairman. My name is Dr. L.D. McMullen and I serve as the General Manager of the Des Moines Water Works. I also serve as Chair of the Association of Metropolitan Water Agencies' Legislative Committee and I am here today to speak on the Association's behalf.

The Association of Metropolitan Water Agencies (AMWA) is a non-profit organization of the directors and managers of the nation's large municipal water supply systems. Our membership includes cities from Los Angeles to Tampa, New York to Portland and Detroit to Houston. AMWA members provide safe, high quality drinking water directly to over 75 million people and indirectly to an even greater percentage of the population through wholesale supply. All AMWA agencies are public water supply systems under the Safe Drinking Water Act.

I am pleased to be with you today to share the views of the Association on the lead contamination control bill, H.R. 2840. The last time AMWA appeared before this subcommittee on April 25 of this year, my friend and colleague, Jim Wickser, Assistant General Manager of Water for the Los Angeles Department of Water and Power, testified on reducing the public's lead exposure from drinking water. His testimony preceded both EPA's promulgation of the final lead and copper regulation, and the introduction of H.R. 2840, the subject of today's hearing.

In his testimony, Mr. Wickser outlined the unique challenges presented in controlling lead exposure in drinking water and offered our views on practical approaches to the problem. He summarized one of our principal concerns for any lead regulation; that it not provide for a maximum contaminant level (MCL) at consumer's taps because that would effectively hold water suppliers legally liable for problems within individual home plumbing systems. We are pleased that neither EPA's regulation nor this bill includes an MCL at the tap. In addition, both the regulation and the bill include key aspects of effective lead contamination control in drinking water supported by water suppliers, namely:

- control of lead in source waters,
- diagnostic, first draw testing for lead in single-family residences representative of the service area taking into consideration building age, location, type, service connection characteristics, demographics, and water consumption,

- a treatment technique - optimized corrosion control - to prevent or reduce lead problems within the home environment which would be keyed by results of diagnostic sampling, and
- public education programs, again keyed to diagnostic sampling results.

Aside from several very important issues in the bill which relate to the general application of the Safe Drinking Water Act, which I will mention later, the major concerns for water suppliers posed by the bill do not involve its framework, but rather a number of significant practical problems resulting from its specific requirements.

The first issue I would like to address this morning is the tap water lead limit.

Tap Water Lead Limit

H.R. 2840 establishes a tap water lead limit of 10 parts per billion. Water suppliers are to measure for lead in those places where research has shown that the highest levels will occur, private residences served by lead service lines and those that contain copper pipes with lead solder installed after 1982 or lead plumbing. Nationwide, this sampling pool makes up about 15 percent of the housing population. The samples will also be first flush samples taken after water has remained motionless in the plumbing for at least six hours. These sampling methods insure that the worst case sites are sampled under worst case conditions. Further action required by a water supplier including optimal corrosion control, public education, and lead service line replacement will be governed by the levels of lead found in these homes.

The bill requires these actions if any sample from worst case sites taken under worst case conditions exceed the tap water lead limit. This "one sample" trigger does not make any allowance for the mistakes, omissions, or even illegal activities of others but holds water suppliers, and ultimately all of their other customers, responsible for them. For example:

- The use of lead solder in drinking water plumbing has been illegal since 1986. Its use continues.
- Studies have shown that brass faucets holding lead free water for an 8 hour period can leach lead into the water at levels of 10 micrograms per liter and higher.
- Improper grounding of telephone and electrical circuits in homes to water lines can increase corrosion leading to increased lead levels in the water.
- Installation of dissimilar metals in plumbing systems can lead to galvanic action increasing lead levels.

Any of these can cause lead levels in excess of 10 parts per billion even with optimal corrosion control in place. As presently written, therefore, the bill would effectively require mandatory corrosion control for all systems, not just large systems (even if the water supplied was already minimally corrosive and further actions would have negligible effect), because of the level and the one time exceedance trigger. The cause of the problem would not matter, neither would the need for corrosion control by the community. As a worst case, a community of 10,000, for example, would be required to add corrosion control treatment chemicals to their supply and require each customer to pay for corrosion control treatment even if only one person's sample exceeded the level because of one brass faucet that leached excessive lead.

Timeframes

The timeframe allowed water systems in the bill (18 months) to perform corrosion control studies and install optimal corrosion control is technically and scientifically impossible to meet. All time periods for large water system actions and state actions run concurrently from enactment of the bill even though state and EPA reviews and decisions, by their nature, must run consecutively with water system actions. A provision of the bill requires EPA review of all state decisions but does not include time for such reviews. The bill also allows EPA six months after enactment to issue regulations or guidelines to facilitate compliance with the requirements of the bill. This key guidance will include how systems will be required to conduct corrosion control studies and how states will evaluate studies. The net effect, under the bill, is that EPA and the states can use most of the available total time to meet their requirements and large water systems will get whatever remains. If EPA and/or states take more than their allowed time, water systems get even less. It is entirely possible that EPA and the states could use all of the available time and water systems fall into violation through no fault of their own.

For example, large systems are required to complete corrosion control studies within 12 months of enactment. This time period is vital for determining optimal corrosion control since different products and/or feed rates will be required depending upon water quality changes over warm weather and cold weather cycles. It is also important for the studies to be done properly to insure that no needless chemicals are added to the drinking water supply and the impacts on other water quality parameters that could adversely affect public health are not caused by the selected treatment. (For example, seasonal turbidity changes, seasonal biological changes and the interaction between corrosion control and minimizing potentially harmful disinfection byproducts are a few of the factors that need to be carefully considered). If EPA takes the first 6 months or more after enactment to issue regulations or guidance on corrosion control, at most 6 months would be available for system studies. Optimal corrosion control studies are simply not feasible in a six month time period.

Also under the bill, large systems are required to install corrosion control within 24 months of enactment, the first 12 months will be taken up by corrosion control studies and the states will be allowed the next 6 months to review and approve the studies or direct the type of corrosion treatment required. This state decision must then be reviewed by EPA and is subject to change. This will leave the systems between zero and 6 months to obtain funding approval and funds, contract for design, design, contract for construction, construct, obtain equipment and chemicals and begin operation of a corrosion control system after they are notified by the state of what they will be required to do.

The timeframes for medium and small systems are equally impossible to meet. The timeframe is an improvement, however, on that allowed large systems since it acknowledges that steps that are sequential should have sequential time frames. Like large systems, no time is allowed for EPA reviews. A full 12 months is allowed for corrosion control studies if they are required by the state, but, while this would be adequate for most large systems, it is not for medium and small ones. Large systems will likely possess the in-house expertise to perform their own studies while medium and small ones will use much of the time allowed in obtaining funding approval and hiring a consultant to perform the studies. Medium and small systems are also allowed only 12 months to obtain funding approval and funds, contract for design, design, contract for construction, construct, obtain equipment and chemicals and begin operation of a corrosion control system. For these systems, the funding part of the equation may prove the most difficult to meet.

Any timeframes contained in a final bill should fully reflect the importance of adequate corrosion control studies in protecting public health by allowing sufficient time for them. It should likewise reflect an understanding of municipal finance regulation, contracting, design, procurement, and construction timeframes. Clearly any timeframes that are too short to include the actions required are not feasible. At a minimum, 12 months should be allowed for corrosion control studies and 24 months for construction, and 6 months for operation and final analysis prior to taking post corrosion control tap samples for a total of 3 1/2 years. The full 3 1/2 years must be available to water suppliers for optimizing corrosion control. Timeframes for state and federal actions should be considered separately and local water suppliers should not be penalized because the federal or state governments fail to act.

Resource Constraints

The General Accounting Office (GAO) has recently reported that 60 percent of the states presently have insufficient funding and/or staffing to carry out current drinking water programs. Report after report from the General Accounting Office on all EPA programs, not just drinking water, embrace the conclusion that agency resources are inadequate and must be increased to insure that congressional expectations can be met.

In a report issued this past month entitled "Environmental Protection: Meeting Public Expectations with Limited Resources", GAO states, "...clearly the federal government, with a budget deficit estimated at nearly $300 billion for fiscal year 1991, will be sharply constrained by costs in its ability to address the nation's multibillion-dollar environmental needs. State and local governments also face fiscal troubles..." Members of the subcommittee, because of your position, you are far more familiar than anyone with the constraints faced by the federal government, your states and the municipalities within your districts. I ask that you keep those capabilities in mind as we review some of the additional requirements of this bill.

The bill's combined accumulative impact on EPA and state resources may result in a program that stalls the progress of water systems attempting to deal expeditiously with lead in drinking water as well as other aspects of Safe Drinking Water Act (SDWA) implementation. The bill:

- Adds 120,000 transient, non-community systems to the 80,000 systems presently scheduled for regulation. This will require major increases in state drinking water program resources.
- Requires EPA to review each state review and decision at each step of the process. This will require a buildup in EPA resources under constraints similar to those faced by the states.
- Requires all 200,000 state and EPA reviews to be accomplished within the same timeframe of approximately one year.
- Requires 200,000 "opportunities for comment" within the same timeframe of approximately one year.
- Requires EPA to promptly withdraw primary enforcement responsibility for all aspects of the SDWA in the case of any state not fully implementing the requirements of the SDWA including the requirements of this bill.

The provisions which seem reasonable taken separately, when taken together, result in a bill, that is intended to improve the drinking water program, actually having a negative impact. The states and EPA are in a much better position to advise the subcommittee on actual impacts. I would encourage the subcommittee to seek their input before finalizing these provisions.

Lead Service Line Replacement

H.R. 2840 requires the replacement of lead service lines if any one sample exceeds the 10 ppb tap water lead level. The one exceedance triggers lead service line replacement at an annual rate of either 20 percent of the lead service lines or 10 percent of the total service lines, whichever results in replacement of a greater number of lead lines. Basically a 5 year or shorter program.

Under the bill, a system is not required to replace an individual lead service line, if the state determines, after notice and opportunity for comment, that the service line does not contribute to tap water lead concentrations in excess of 10 ppb.

In addition, the bill provides for an extended schedule for those water suppliers with more than 50,000 lead service lines. A provision recognizing the difficulty a system with a large number of lead service lines faces is greatly appreciated.

Because of the one time exceedance provision and the level of the allowable service line contribution, H.R. 2840 is, in essence, a mandatory lead service line replacement bill. The financial impacts on water system users throughout the country will be significant.

The time schedules allowed for replacement also need to be given serious consideration. Under the bill, a water system with 50,000 lead service lines would be required to replace at least 10,000 lines per year for 5 years. A large system with 500,000 total service lines would be required to replace all 50,000 lead lines in one year. Based on 250 work days per year, systems, therefore, would be required to replace between 50 and 200 service lines per day depending upon system size. Replacement of a service line requires a trained crew and equipment and would normally involve road or sidewalk excavation for access to the line. In most cases, it would also involve access to the home and excavation of private property. The access problem, by itself, could cause a system to fail to meet the required schedules. The bill also requires replacement to begin immediately when a system fails to meet the "one sample" tap lead level trigger (which few could meet as previously discussed), or when a state fails to meet the deadline set for the state to designate optimal corrosion control. Again water suppliers would be held legally responsible for the failures of others.

AMWA has consistently recommended that any regulation governing lead service line replacement be built around a schedule tailored to the circumstances of the system since those circumstances are so varied. States, in conjunction with local water suppliers, should designate an enforceable schedule for each system based on factors including the size of the system, the number of lead service lines in the system, the location of the lines, the complexity of replacement, and the magnitude of the lead level exceedances measured. States should be constrained to establish a schedule which is feasible to meet under the criteria and provide, within that context, for unusual circumstances, and then only after review and approval by the EPA administrator. The setting of schedules should be open for review and comment by the public as well.

Control Versus Ownership

Under H.R. 2840, water suppliers are responsible for replacing entire lead service lines, regardless of ownership, in those cases where, by state statute or local ordinance, they have authority to set standards or authority to replace service lines.

The impact of this provision will be felt by cities, towns and townships of all sizes and will vary in impact depending on state and local laws and ordinances. For example, if a municipality has 10,000 lead service lines out of a total of 100,000 service lines, all 10,000 lines would be required to be replaced in a one year period. Under this provision, city water suppliers will also be required to dig up and replace service lines on private property and finance the replacement costs through general rate increases.

The water supply community has always defined the term "control" to mean "ownership" with the understanding that the water supply system stopped at the property line or the water meter unless the supplier actually owned the structures past those points. This bill defines control differently and places significant additional financial and legal responsibilities on water suppliers.

Notice and Opportunity for Comment

Public participation in the development of regulations and laws is an essential part of our form of government. However, we urge the subcommittee to consider the accumulative impact of the bill's requirements for "notice and opportunity for comment" and its impact on the drinking water program. Because the wording of the House bill requires virtually every system to install corrosion control, during the year starting 6 months after enactment, states will be required to make over 200,000 determinations and hold 200,000 hearings or other opportunity for comment. Failure to do so will, under other provisions of the bill, result in an immediate requirement for systems to start lead service line replacement, and require EPA to withdraw primacy from the state. EPA is also required to make 200,000 reviews since it must review all state reviews and every case where a state fails to make a decision within the time allowed. Another 200,000 reviews and hearings will be required when water quality parameters are set.

The shear number of notices and opportunities for comment, will delay the entire process and hinder the progress of systems attempting to come into compliance with Federal requirements.

Safe Drinking Water Act Reauthorization Issues

There are several very important provisions contained in H.R. 2840 which impact the entire Safe Drinking Water Act program and that need to be thoroughly discussed in the context of reauthorization of that statute.

Practical Quantitation Limit

Section 1418J of H.R. 2840 prohibits EPA from developing regulations based on "the level of a contaminant which is economically or technological feasible to measure." This section also requires all existing rules using PQLs to set MCLs to be reissued with required treatment techniques within 6 months of enactment.

The significance of this provision cannot be overstated. It not only impacts the lead regulation but every other regulation developed by EPA in the drinking water program and every program that uses the drinking water standards (for example Superfund). Its ramifications are far reaching and deserve careful consideration during reauthorization of the SDWA.

Classes of Public Water Supply

H.R. 2840 prohibits EPA from establishing different requirements based on system size even though the bill itself found it necessary to vary requirements based on size.

This is a very important issue and one which needs to be addressed. As a general philosophical position, I think we all agree that all systems should be treated equally. As a practical matter, it simply is not possible.

The problems all communities, but particularly small communities, face in dealing with the multitude of environmental mandates is becoming clearer every day and has become an area of congressional concern and interest. We urge the subcommittee to address the issue and problems of system size, but recommend that that discussion take place in the context of the Safe Drinking Water Act reauthorization.

Action Levels

H.R. 2840 eliminates the use of action levels in setting regulations. The bill itself recognizes the appropriateness of using a tap water lead level, in essence an action level. Similar situations may well present themselves in the future. We would like to urge the subcommittee to eliminate the prohibition on the future use of action levels and to give full consideration of the issue during the reauthorization of the Safe Drinking Water Act.

Citizen Suit Provisions

H.R. 2840 also amends the citizen suit provisions of the Safe Drinking Water Act. These provisions are more properly dealt with in the context of the Safe Drinking Water Act when the appropriate role of citizen suits can be fully evaluated in relation to the other enforcement tools available to EPA and the states.

Conclusion

Members of the subcommittee, we support the major tenants of H.R. 2840: corrosion control treatment, lead service line replacement, public education and testing at the consumer's tap. Our major concerns with the lead provisions of the bill are the one time exceedance trigger and the time frames mandated for corrosion control and lead service line replacement.

AMWA strongly urges the subcommittee to delete the provisions of the bill that would eliminate EPA's use of the Practical Quantitation Limit (PQL). This provision has major ramifications for drinking water suppliers throughout the country as well as for all other program areas that utilize SDWA's standards. Citizen suit provisions, how to deal with systems that have difficulty meeting the requirements of the act because of size, and action levels are all issues to be addressed during reauthorization of the Safe Drinking Water Act.

I would like to thank the subcommittee for working with us on this very important issues and welcome the opportunity to continue to work with the subcommittee on this and other Safe Drinking Water Act issues.

This concludes my remarks and I would be happy to answer any questions you may have.

Mr. **Waxman**. Thank you very much, Mr. McMullen.
Mr. Parrish.

STATEMENT OF WILLIAM F. PARRISH, JR.

Mr. **Parrish**. Good afternoon. My name is William Parrish. I'm the administrator of the drinking water program for the State of Maryland, Department of the Environment. I am here representing the Association of State Drinking Water Administrators, ASDWA, which is a professional association which represents the interests of State drinking water programs, whose primary mission is the protection of public health through effective management of State drinking water supply programs and implementation of the Safe Drinking Water Act. Fifty-six States and territories are members or participants in ASDWA and its activities.

These administrators are supportive of the need to reduce lead exposures through paint, dust, food and drinking water, particularly for susceptible populations such as small children. They are supportive of requirements that suppliers of water to communities, schools, day care centers and businesses provide, to the best of their ability, water that is noncorrosive in distribution and plumbing materials and that portions of the distribution system under their control do not create hazards with respect to lead in water.

While the intent of the Lead Contamination Control Act of 1988 was to address some of these concerns, the lack of funding for State program implementation of the act and for school testing remediation has significantly hampered the efforts of States and schools to comply with the provisions. Nevertheless, many States and schools should be commended for the work they have completed.

While some States may be able to implement the suggested provisions in the 1988 act with adequate funding, there is serious concern about the States' abilities to implement H.R. 2840, which expands the act to include national primary drinking water regulations for lead. In fact, if passed as drafted, this act will spell the end of State primacy under the Safe Drinking Water Act. It would also fail to address the contribution of individual home and building plumbing systems to the problem of lead in drinking water.

The State concerns are basically with the burden of implementation and resource constraints on their programs. States are particularly concerned that the act extends the coverage from approximately 80,000 community and nontransient systems to over 200,000 public water systems. There is no evidence presented to date to suggest that short-term exposure to lead levels found in drinking water from transient noncommunity systems presents a significant health risk that would warrant States and water systems expending such enormous amounts for testing and remediation by extending the regulation to cover the additional 120,000 systems. One State estimates costs for monitoring alone of its 6,500 transient systems will be $20 million.

The act also shortens the compliance period to require all systems to begin implementing tap sampling within 6 months of enactment and eliminates a State's ability to manage the significant work load generated under this act based on the availability of State resources to conduct the work.

The requirement will also stipulate that State and EPA Agencies cannot regulate any class of public water supply in a manner that may be less protective of public health than is required for all other public water systems. This will dramatically alter the manner in which EPA promulgates regulations by requiring all systems to comply with the same requirements regardless of size and degree of health risk posed by the use of water by the public.

Under the amendments, the States are also required to make various and numerous technical determinations which must be offered for public notice and comment. We estimate that this implementation would require up to a million opportunities for public hearing and comments under the act.

In addition, States must submit to the Administrator of EPA on a quarterly basis the extensive reporting of all of his activities and decisions made which has addressed the impact on State resources and capabilities, which are already limited under the existing regulations and in the future to be adopted over the next few years.

Also, there is concern that the setting of the TWLL at 10 parts per billion will effectively mandate corrosion control for all but a few systems.

With respect to resource constraints, 33 States are already currently experiencing serious budget deficits, according to a recent study by the National Governors' Association. The aggregate shortfall is about $9.6 billion, or 3.6 percent of total spending. This fiscal dilemma has resulted in significant difficulties for environmental and public health programs, of which drinking water is a part. Across this country, drinking water administrators and staff are being furloughed, personnel are taking pay cuts, and Agencies are implementing hiring freezes. This comes at a critical time when most States have recognized that sufficient funding for the Safe Drinking Water Act will not be forthcoming from the Federal Government, and State legislatures are reluctant to fund any more Federal mandates with limited State dollars. Furthermore, many water systems may not be able to support fee-based systems due to excessive monitoring and compliance costs which are required to achieve compliance with the Safe Drinking Water Act regulations.

According to a resource needs study conducted by EPA and ASDWA in 1988, States estimated that an additional $47 million will be required to implement the EPA lead and copper rule. Enactment of the LCCA amendments will require far greater expenditures, on the order of an additional $117 million.

Mr. **Waxman**. Mr. Parrish, the rest of that statement is going to be in the record.

Mr. **Parrish**. Pardon?

Mr. **Waxman**. The rest of your statement will be in the record, that you're reading to us.

[The prepared statement of Mr. Parrish follows:]

TESTIMONY OF Association of State Drinking Water Administrators

State drinking water program administrators are supportive of the need to reduce lead exposure through paint, dust, food, and drinking water particularly for susceptible populations such as small children. While the intent of the Lead Contamination Control Act of 1988 was to address these concerns, the lack of funding for state program implementation of the Act and for school testing and remediation have significantly hampered the efforts of states and schools to comply with provisions in the Act. While some states may be able to implement the suggested provisions in the 1988 Act with adequate funding, there is serious concern about the states' abilities to implement the proposed 1991 Amendments to the Act (H.R. 2840) which expand the Act to include National Primary Drinking Water Regulations for Lead. In fact, if passed as drafted, this Act will spell the end of state primacy under the Safe Drinking Water Act.

I. INTRODUCTION

The Association of State Drinking Water Administrators (ASDWA) is the professional association which represents the interests of state drinking water programs. ASDWA's primary mission is the protection of public health through effective management of state water supply programs and implementation of the Safe Drinking Water Act (SDWA). To accomplish this mission, the Association provides vital communication, coordination, and information transfer services between state programs and EPA, the Congress, and other national organizations. All 56 states and territories actively support the Association through dues payments and/or participation in ASDWA activities.

II. LEAD CONTAMINATION CONTROL ACT OF 1988

The Lead Contamination Control Act (LCCA) of 1988 required: 1) the identification of water coolers that are not lead free; 2) the repair or removal of water coolers with lead-lined tanks; 3) a ban on the manufacture and sale of water coolers that are not lead free; 4) the identification and resolution of lead problems in schools' drinking water; and 5) the authorization of additional funds for lead screening programs for children.

The LCCA identified four areas of involvement (not requirements) for state agencies: 1) to complement the EPA guidance document and testing protocol by providing a list of laboratories qualified to conduct lead testing; 2) to use the EPA guidance documents to assist local school systems and education agencies -- although testing is not required; 3) to establish and carry out programs to assist local education agencies in testing and remedying lead contamination through grants issued by the Administrator; and 4) if funds are available, the Centers for Disease Control may make grants available to states and local governments for initiating and expanding education and blood testing programs.

To assist states in helping local educational agencies address these issues, the Act authorized appropriations of $30,000,000 for FY-89; $30,000,000 for FY-90, and $30,000,000 for FY-91. To date, no funding has been provided to states to implement this program or to use in assisting school systems to defray expenditures associated with lead testing and remediation.

III. IMPLEMENTATION OF THE LCCA OF 1988

According to a Natural Resources Defense Council June 1991 report entitled *The Lead Contamination Control Act: A Study in Non-Compliance*, 47 states reported that school drinking water had been sampled and analyzed with 66 percent of these states indicating that between 25 and 100 percent of their schools had been tested. In addition, 33 states (62%) indicated that they had distributed the EPA guidance manual for lead testing to all of their schools. Another 11 states (21%) indicated that they had distributed pertinent information regarding the manual and order forms directly to school superintendents, school principals, and day care/preschool administrators. Thirty-three states instituted acts of remediation either upon notification of excessive lead levels in the drinking water of tested schools, or upon identification of water coolers that were on EPA's not lead-free list (even if they were not sampled and analyzed). The report indicates however, that on the whole, the nationwide assessment of lead in school drinking water that should have been stimulated by the LCCA has not occurred.

A number of reasons can be presented for less than 100 percent implementation of the LCCA. The primary reason is that no funding was ever appropriated for states to implement any aspect of the suggested actions in the Act. In fact, many states should be commended for providing the amount of assistance they have given despite the severe budget deficits being experienced by numerous states and the added costs of implementing new EPA regulations such as the Surface Water Treatment Rule and the Total Coliform Rule. A second important factor is the desire and willingness of school administrators to complete lead testing programs. At a time when school budgets are being cut, many schools do not appear to have adequate funds to address such issues as asbestos removal, radon testing, and lead testing and remediation. In fact, at least one water utility offered to provide free lead analysis for all water outlets - not just suspect water coolers - in schools in their distribution area yet very few schools could be convinced to participate in the program.

IV. LEAD CONTAMINATION CONTROL ACT AMENDMENTS OF 1991

While the intent of the Lead Contamination Control Act Amendments of 1991 is commendable, certain aspects of the Bill have raised serious concerns among state drinking water program administrators as to their ability to implement the Amendments should they become part of the Safe Drinking Water Act (SDWA). States are primarily concerned with the section on National Public Drinking Water Regulations for Lead. In essence, this section duplicates the EPA National Drinking Water Regulations for Lead and Copper, promulgated May 6, 1991 but:

1) expands the coverage of the Lead and Copper Rule from 80,000 public water systems (PWS) to over 200,000 PWS;

2) eliminates EPA's authority to set standards for drinking water contaminants based on what can be accurately measured during routine laboratory operations;

3) establishes a tap water lead limit (TWLL) of 10 ug/l;

4) establishes a source water MCL of 5 ug/l;

5) dramatically shortens compliance times for all systems;

6) requires implementation of corrosion control practices for all systems except that small and medium size systems can avoid corrosion control if they meet the TWLL;

7) requires large systems to begin corrosion control studies within 6 months of enactment and complete installation of treatment within 24 months of enactment;

8) requires small systems to recommend corrosion control within 6 months of exceeding the TWLL and complete installation of treatment within 12 months of a state determination;

9) requires states to provide notice and opportunity to comment on almost every decision related to implementation of the Act; and

10) makes implementation of the Act a primacy requirement.

V. STATE CONCERNS

Burden of Implementation

States are particularly concerned that the Act extends the coverage from approximately 80,000 community and non-transient non-community systems to over 200,000 public water systems. There is no evidence to suggest that short term exposure to lead levels found in drinking water from transient non-community systems presents a significant health risk that would warrant states and water systems expending such enormous costs for testing and remediation by extending the regulation to cover the additional 120,000 systems. The Act also shortens the compliance period to require all systems to begin implementing tap sampling within six months of enactment. This requirement eliminates the states' abilities to manage the significant workload generated under this Act based on the availability of state resources to conduct the work. In addition, the Act stipulates that EPA and state primacy agencies cannot regulate any class of PWS in a manner that may be less protective of public health than is required for all other public water systems. This requirement will dramatically alter the manner in which EPA promulgates regulations by requiring all systems to comply with the same requirements regardless of size. The impact of this requirement on small systems and state workload will be devastating.

Under the Amendments, states are required to: 1) make determinations on optimized corrosion control treatment for small, medium, and large size systems; 2) provide a written notice to the system specifying the water quality control parameters representing optimal corrosion control including identifying appropriate pH values and a minimum concentration for the corrosion control inhibitor; 3) monitor the status of system corrosion control programs based on sample testing; 4) review the system's installation of treatment; and 5) provide in writing any changes to the system's corrosion control program. These five decisions, required to be made by the state for each of the 200,000 PWS all require the opportunity for a notice and comment period. This would require states to provide over one million opportunities for hearing and comments and grossly exceeds state resources to implement.

In addition, states must submit to the administrator on a quarterly basis the names and PWS identification number for each public water system which exceeded any MCL for lead or the TWLL and the date upon which the exceedance occurred; each PWS required to complete the corrosion control evaluations and the date on which the state received the evaluation; each PWS for which the state has designated optimal corrosion control treatment, the date of the determination, and each system which completed the installation of treatment; each PWS for which the state has designated optimal water quality parameters and the date of the determination; each PWS required to begin replacing lead service lines; each PWS for which the state has established a replacement schedule; and each system reporting compliance with its replacement schedule. States must also forward to the administrator each state determination and all information that was considered by the state in making its determination, including public comments, within 60 days of the state determination.

States simply do not have adequate staff to conduct and track this enormous quantity of paperwork nor do they have sufficient engineering staff to make all the corrosion control decisions, review the effectiveness of installed treatment, and determine whether the treatment has been effective. In addition, the requirements are stated such that very few, if any, systems will be able to meet the TWLL, effectively mandating corrosion control for all but a few systems.

Resource Constraints

Thirty-three states are currently experiencing budget deficits, according to a recent study by the National Governors' Association. The aggregate shortfall is about $9.6 billion, or 3.6 percent of total spending. This current fiscal dilemma has resulted in significant difficulties for environmental and public health programs, of which drinking water is a part. Across this country, drinking water administrators and staff are being furloughed, personnel are taking pay cuts, and agencies are implementing hiring freezes. This comes at a critical time when most states have recognized that sufficient funding for the SDWA will never be forthcoming from the Federal Government; state legislatures are reluctant to fund any more Federal mandates with limited state dollars; and many water systems may not be able to support fee based systems due to excessive monitoring and compliance costs which are required to achieve compliance with the SDWA regulations.

According to a resource needs study conducted by the EPA and ASDWA in 1988, states estimated that an additional $47 million will be required to implement the EPA promulgated Lead and Copper Rule. Enactment of the LCCA Amendments will require far greater expenditures -- on the order of an additional $117 million and will "break the bank."

VI. DEMISE OF STATE DRINKING WATER PROGRAMS

While the need to address the national concern about lead poisoning in children is a valid cause, Congress will effectively destroy the entire structure of state drinking water programs by requiring implementation of the Act as a condition to retain primacy. Not only will this doom implementation of the Act to failure, it will destroy state drinking water programs which have provided public health protection for drinking water for decades.

VII. RECOMMENDATIONS

ASDWA would like to propose the following recommendations that could comply with the spirit of the Act without forcing states to return primacy to EPA. These include:

1) Delete the National Public Drinking Water Regulations for Lead under the Act and permit states to begin implementation of the EPA Lead and Copper Rule which has been promulgated under the established mechanism for the rulemaking process.

2) Conduct a nationwide public education campaign to inform the public of the hazards of lead.

3) Require lead testing and remediation as part of the real estate transfer process.

4) Require schools to test for lead contamination and provide educational programs on lead for students, including the provision of information for parents.

5) Provide sufficient Federal funding to assist states and schools in implementing the provisions of the 1991 Amendments. This is in keeping with one of the recommendations of the Natural Resources Defense Council Report which indicated that it is "imperative that Congress both authorize and appropriate adequate funds to guarantee effective implementation."

These combined programs, many of which are included in the LCCA Amendments, would provide a comprehensive national program without sacrificing state drinking water programs.

****

ASDWA appreciates the opportunity to present its views to the Subcommittee.

Mr. WAXMAN. Mr. Wennberg, we will hear from you next.

STATEMENT OF JEFFREY WENNBERG

Mr. WENNBERG. Thank you, Mr. Chairman.

I am Jeff Wennberg, mayor of Rutland, Vt., and a member of the National League of Cities' Energy, Environment, and Natural Resources Steering Committee. I am here today to testify on behalf of the NLC and the 15,000 member cities and towns across the Nation we represent.

The National League of Cities recognizes the importance of taking concrete steps to significantly reduce, if not virtually eliminate, human exposure to lead. Municipalities are in a unique position to implement comprehensive public education and information campaigns with relative ease. We can hold public meetings, help disseminate information through the local media, target mailings, contact individual residents and warn of potential dangers from lead in drinking water. We can adopt policies and enact ordinances to require that potential home buyers are informed about lead hazards associated with a particular residence.

A public information campaign should dovetail with a comprehensive effort to test lead levels in the drinking water supplies. As a municipality develops a record of patterns of lead contamination within the water system, it can target warnings and assist property owners in identifying lead-reduction strategies.

We acknowledge that many water systems need to diminish the corrosivity of their water. As the mayor of a city that has already implemented corrosion control, I am particularly encouraged by the use of this strategy because I know that lead levels are being reduced throughout our city's water system, even in places that we have not identified as posing a threat to public health.

Although lead service lines need to be replaced in many water systems, I believe that we need to give corrosion control techniques the time to work before undertaking an effort as disruptive and costly as the removal of lead service lines can prove to be.

Based on my understanding, and given my city's experience with corrosion control, I think some modifications should be made to H.R. 2840 to help ensure that municipal water suppliers have sufficient time and also sufficient information to undertake corrosion control successfully. Water system operators indicate that they need a minimum of 1 full year to conduct a corrosion control study, a time frame inadequately provided for in H.R. 2840.

Similarly, many water systems will need more than 1 year to fully implement a corrosion control program. Because water chemistry changes with seasons, fluctuations in rainfall, air temperature and other climactic variations, optimal corrosion control will need to be revised on a regular and ongoing basis. The overall goals needs to be to keep improving the quality and safety of our water, which is likely to require 2 years rather than the 1 year called for in the legislation.

We must also look carefully at the implications of requiring implementation of corrosion control in small systems that are already strapped for resources and often lack the necessary technical expertise. Small water systems need assistance in planning for the required studies and with the implementation itself. Failing to acknowledge this need will simply mean that lead levels in these communities will not be lowered.

Although we recognize and support the removal of lead service lines known to contribute significantly to water lead levels, the cost of this undertaking warrants a careful look at timely and effective alternatives that can achieve a comparable reduction in lead levels. Water suppliers should make every effort to inform residents of the contribution that lead lines they own are adding to the contamination of their own water. On the other hand, it is inappropriate for municipalities to go into a private home to make changes on the property itself.

One final point I would like to make on the requirements to ensure that lead levels in drinking water in every home should fall below the 10 parts per billion tap water lead limit. We believe it is preferable to establish a requirement to be attained by 90 percent of the high risk homes, as is required in the regulations promulgated by EPA. We do not propose to ignore the remaining homes that may exceed the lead limit. Rather, I suggest that the legislation permit the use of other approaches that would work to reduce lead exposure in those homes but wouldn't involve systemwide solutions.

It must be recognized that any time you introduce any chemicals into the drinking water supply, you run the risk of lessening its quality. This can result from the inappropriate application of the chemical or from the interplay of that chemical with others previously applied or naturally contained within the supply. The chemistry of water is a tricky science, with many factors impacting its characteristics.

I thank you for the opportunity to appear before you today, and I will be pleased to answer any questions you may have.

[The prepared statement of Mr. Wennberg follows:]

PREPARED STATEMENT OF JEFFREY WENNBERG, MAYOR, RUTLAND, VT.

Mr. Chairman, members of the subcommittee, I am Jeff Wennberg, Mayor of Rutland, Vermont, and a member of the National League of Cities' Energy, Environment, and Natural Resources Steering Committee. I am here today to testify on behalf of NLC and the 15,000 cities and towns across the nation we represent on the reduction of lead contamination in drinking water supplies.

First, I commend the work of this committee as you seek to reduce the exposure of children to a contaminant as threatening as lead can be. H.R. 2840 incorporates significant steps to that end. We strongly support the comprehensive screening of children for elevated lead levels in the bloodstream as well as the evaluation of schools and day care centers for lead paint and drinking water hazards. In addition, we agree that informing the public of the health threats posed by exposure to lead and the preventive measures that can be taken is critical to the overall effort of reducing lead levels in humans.

The successful implementation of a lead reduction effort will require us to combine forces and figure out how it can best be achieved. I am here to offer the cooperation of the nation's municipalities and to convey some recommendations to make this process workable.

Lead Reduction Efforts

The National League of Cities recognizes the importance of taking concrete steps to significantly reduce, if not virtually eliminate, human exposure to lead. The impact of lead on persons of all ages is sufficiently ominous to warrant dramatic action and municipal elected officials understand and fully accept our share of the responsibility for protecting the health of the public.

As mayor of Rutland, Vermont, and speaking for the National League of Cities, I can lend my unequivocal support to a comprehensive public information campaign to alert municipal residents, especially parents, of the dangers associated with lead exposure. No other government entity is in a better position to help safeguard public health.

Municipalities can hold public or town meetings, help disseminate information through the local media, target mailings, contact individual residents and warn of potential dangers. There are other actions we can take beyond informing the public. We can adopt policies and enact ordinances to require that potential homebuyers are informed about the lead hazards associated with a particular property.

A public information campaign, as conducted by a city or town, needs to dovetail with a comprehensive effort to test lead levels in the drinking water supplies, both as the water begins to be distributed and as it comes out of the residential tap. As a municipality develops a record of patterns of lead contamination within the water supply system, it can target warnings and assist property owners identify lead reduction strategies.

Corrosion Control

To complement and enhance the testing and public information campaigns, many water systems need to diminish the corrosivity of their water supplies to lower the chances that lead will leach into the drinking water. As the mayor of a town that conducted a comprehensive study of its water system's corrosivity and implemented a corrosion treatment, I can speak to the benefits that result when water corrosion is reduced.

In Rutland, complaints about the "dirtiness" of the water led the city to implement its anticorrosion effort. The water system introduced zinc orthophosphate into the water supplies to serve as a barrier between the water and the water lines, allowing the water supplies to pass without leaching excessive amounts of contaminants and, therefore, "dirtying" the water. The implementation of corrosion control provided the additional benefit of reducing the water system's lead levels.

We initiated the use of zinc orthophosphate in late 1988 and have now had sufficient time to evaluate its impact. Our testing of high risk homes revealed dramatic reductions in their drinking water lead levels. I am particularly encouraged by the use of corrosion control because I know that lead levels are being reduced throughout the water system, even in places that have not been identified as posing a health threat. Although lead service lines do need to be replaced in many water systems, I believe that we need to give corrosion control techniques the time to work before undertaking an effort as disruptive and costly as the removal of lead service lines can prove to be.

Based on my understanding and given my city's experience with corrosion control, I think some modifications should be made to H.R. 2840 to help ensure that municipal water suppliers have sufficient time to undertake a corrosion control study. Water system operators indicate they need a minimum of one full year to conduct a corrosion control study.

As presently drafted, the legislation would not provide a full year for the development of the corrosion study. The bill allows only one year for both the promulgation of regulations and the formulation of the corrosion control study.

Similarly, many water systems are going to need more than one year to fully implement a corrosion control program. Although the corrosion control study will help identify the overall approach that is best suited for a particular system, implementing the corrosion techniques can take longer than one year. Applying corrosion control will require water suppliers to design the corrosion projects, secure funding, and complete their construction. Each one of these steps is time consuming.

Also, because water chemistry changes with the seasons, fluctuations in rainfall, air temperature, and other climactic variations, optimal corrosion control will need to be revised on a regular basis. The overall goal needs to be to keep improving the quality of the water, which is likely to require a minimum of two years, rather than the one year called for in the legislation. Water system operators have said they need a minimum of two years, rather than one, to implement this aspect of the legislation.

Small water systems are required, overwhelmingly, to undertake corrosion control efforts. While I support the benefits resulting from these treatments, I think we must carefully look at the implications of establishing such a requirement for systems that are already strapped for resources and often lack the technical expertise to ensure optimal corrosion control. Small water systems need assistance with the planning of corrosion control studies and with the implementation of any necessary adjustments to their water supplies. While this may prove costly, failing to acknowledge this need will simply mean that lead levels will not be reduced and children could be exposed to dangerous levels of lead through the water.

H.R. 2840 also could unjustly penalize a municipal water system for a state's failure to approve a corrosion control strategy within the allowed time period. We recognize the need to include incentives or penalties in any legislation that protects the public health. But as proposed in the bill, this requirement would result in gross unfairness to a municipality that had expended the effort and incurred the expense of a corrosion control study but which found itself at the mercy of a state without the capacity to review and approve such a study. I think it would be beneficial to add some flexibility to this section of the legislation to avoid triggering a lead service line replacement initiative unnecessarily. A water supplier should not be held responsible for something outside its control.

Lead Service Line Replacement

Although we recognize and support removing lead service lines when they are known to contribute significantly to the water lead levels, the cost of this undertaking, I believe, warrants taking a careful look at timely and effective alternatives that achieve a comparable reduction in lead levels. But most importantly, we do not feel it is appropriate or just for a municipal water system to be held responsible and liable for the replacement of water lines it does not own.

We think the bill's definition of control of a service line basically translates into a lead service line removal requirement. As you know, municipalities are very likely to have already established standards for the construction, repair, or maintenance of water lines. By setting such standards, a municipality would be deemed responsible for water lines it did not own and would require their removal if corrosion control failed to ensure a Tap Water Lead Level of 10 ppb.

I think water suppliers should take every opportunity to inform residents of the contribution that the lead lines they own are adding to the contamination of their water. On the other hand, I do not think it is appropriate or correct for a municipality to go into a private home to make changes to the property. We, and many of our homeowners, think this is entirely inappropriate.

I would also point out that municipalities throughout the country, Rutland included, are adopting programs to facilitate making home improvements when the home poses a threat to the health or safety of its residents. Examples in Rutland include the city providing no-interest loans for the removal of dangerous electrical wiring and faulty water lines, among a number of potential hazards found in deteriorated homes.

One final point I would like to make pertains to the general goal of the Lead Contamination Control Act of 1991. That is, that the lead levels in the drinking water in 100 percent of the homes should fall below the 10 ppb Tap Water Lead Limit. While this is indeed a worthy goal, the costs of bringing lead levels below this limit may prove out of the reach of many water systems, particularly the smaller ones. I think it is preferable to establish a requirement to be attained by 90 percent of the high risk homes, as is required in the regulations promulgated by the Environmental Protection Agency. I do not propose to ignore the approximately 10 percent of the homes that may, in some locations, exceed the lead limit. Rather, I suggest that the legislation permit the use of other approaches that would work to reduce lead exposure in those homes.

As I already mentioned, my city has adopted programs to help low-income persons with the financing of certain home repairs. A high priority for this program is the removal of hazards such as dangerous electrical wiring. We expect to be adding to the list of qualified repairs the removal of lead lines, lead solder, or water fixtures that contribute lead to the tap water. This type of program, in conjunction with an aggressive information campaign, can assure great progress toward reducing lead exposure from drinking water.

In addition, I think that requiring a system to ensure that 100 percent of the homes fall within the admissible lead limits can prove intrusive to the property owners and residents. I think a municipal water supplier should do everything within its powers to inform of potential danger and assist in the correction of the problem without actually going into the home and making improvements to the property.

The last issue I would like to raise regarding 100 percent "coverage" is that we must not fail to recognize that anytime you introduce any chemicals into the drinking water supply you run the risk of lessening its quality. This can result from the inappropriate application of the chemical or from the interplay of that chemical with others previously applied to the water. The chemistry of water is a tricky science, with many factors impacting its characteristics.

Finally, I would like to urge you to continue to stress the reduction of human exposure to lead through lead-based paint. As municipal officials, we are seriously concerned that the greatest source of contamination may not be sufficiently reduced to ensure the safety of our nation's children. We would like to work with you to guarantee that local building codes and housing rehabilitation contractors ensure that this most serious source of lead contamination is removed correctly.

I thank you again for the opportunity to appear before you today. I will be pleased to answer any questions you may have.

Mr. WAXMAN. Thank you very much, Mr. Wennberg.

Mr. Gloriod.

STATEMENT OF TERRY GLORIOD

Mr. GLORIOD. Good afternoon, Mr. Chairman. My name is Terry Gloriod. I am vice president of production for the St. Louis County Water Co., and I am chairman of the Water Technology Committee of the National Association of Water Cos.

The NAWC represents the Nation's privately and investor-owned water utilities. We have 320 members in 39 States, providing drinking water to 22 million Americans every day.

Mr. Chairman, I strongly applaud your tireless efforts to reduce the threat of lead contamination in this country. The NAWC stands ready to work with you to further reduce the threat of lead poisoning through the Nation's water supply. But as currently written, the NAWC cannot support section 3 of H.R. 2840, the Lead Contamination Control Act Amendments.

H.R. 2840 parallels the 1991 EPA lead rule in many respects. The key difference between the EPA's rule and the Lead Contamination Control Act Amendments, from a technical standpoint, is the parameter used to judge optimization of corrosion control. The former judges optimization at the point where 90 percent or more of worst case, first draw samples have a lead concentration of less than 15 parts per billion. The Lead Contamination Control Act Amendments judges optimization when no first draw lead sample exceeds 10 parts per billion.

My foremost concern is over this tap water lead level of 10 parts per billion. This is a standard that cannot be met even by our member companies already performing corrosion control. It is also very unlikely our member companies with no lead service lines could meet this standard.

My company recently performed voluntary sampling at a school district in St. Louis County. We tested 476 drinking water samples from faucets and drinking fountains. Only three first draw samples exceeded the action level of 15 parts per billion, while 11 exceeded the tap water lead level of 10 parts per billion.

None of the 22 individual schools are served by lead service lines, and the water supply has been subject to corrosion control treatment, including lime softening, which forms a protective film on the interior surface of the pipe materials.

The difference between the 15 parts per billion action level and the 10 parts per billion tap water lead level is not an issue of stringency and public exposure levels. The question is which parameter best serves as a measure of optimization of corrosion control.

There is a risk in establishing an impossible-to-meet measure of corrosion control treatment. It may discourage such treatment that might otherwise be installed were a realistic measure used. A 10 parts per billion tap water lead level will not distinguish between those systems that have optimized corrosion control and those that have not.

Other provisions of the legislation also cause concern. Section 1418B reduces the time allowed for corrosion control from 6 to 3 years. In addition, systems have, with few exceptions, only 5 years to replace all of their lead service lines. These time frames are unworkable. I would recommend instead that each water system develop the shortest timetable feasible, subject to approval by the primacy Agency.

Section 1418E, subsections (d) and (e), require water systems to replace the entire lead service line if under the systems "control". Control, however, is defined much more broadly than ownership and will make systems responsible for the replacement of lines they do not own.

Mr. Chairman, the public education notices found in the bill are alarming and sensational. This language ought to be modified so that it is informative, not inflammatory, or it should be completely removed and allowed to be determined in the regulatory process.

Finally, section 1814E, subsection (i), encourages our members to enter the banking field. The responsibility to fund plumbing removal lies squarely with the home owner, not the water supplier.

In conclusion, Mr. Chairman, the health effects of lead are a serious matter that must be addressed. The EPA rule, although not perfect, was a reasonable compromise for achieving reduced lead levels in drinking water. In comparison, H.R. 2840, as currently crafted, is not workable. We encourage the Congress to allow the EPA's lead rule time to produce results. Further steps to reduce lead exposure through drinking water must be judged in light of the experience and information gained through this process.

I am grateful for the opportunity to testify before you today, and would be happy to answer any questions you may have. Thank you.

[The prepared statement of Mr. Gloriod follows:]

TESTIMONY OF

THE NATIONAL ASSOCIATION OF WATER COMPANIES

Good morning Mr. Chairman. My name is Terry Gloriod, I am Vice President of Production and Systems Operations for St. Louis County Water Company. I am also Chairman of the Water Technology Committee of the National Association of Water Companies.

The NAWC represents the nation's privately- and investor-owned water utilities. We have 320, taxpaying, PUC regulated members in 39 states employing 15,000 people in a $2 billion industry. Our member companies proudly provide safe, reliable drinking water to 22 million Americans every day.

Mr. Chairman, I strongly applaud your tireless efforts to reduce the threat of lead contamination in this country. Tremendous steps have already been made to reach this goal largely because of your determination. The NAWC stands ready to work with you to further reduce the threat of lead poisoning through the nation's water supply. But as currently written, the NAWC cannot support section 3 of H.R. 2840, the Lead Contamination Control Act Amendments of 1991 (LCCAA).

H.R. 2840 parallels the May 1991, EPA Lead Rule in many respects. First, the goal of the two is identical: to minimize lead exposure from drinking water. Second, the mechanism employed is the same. Both require optimization of corrosion control at the treatment plant; both require replacement of applicable portions of lead service lines where warranted; both require a public education program under appropriate conditions.

The difference between EPA's rule and the LCCAA, from a technical standpoint, is the parameter used to judge optimization of corrosion control. The former judges optimization at the point where 90 percent or more of worst case, first draw samples have a lead concentration of less than 15 ppb. The LCCAA judges optimization when no first draw lead sample exceeds 10 ppb. This standard is not reflective of optimizing corrosion control.

SECTION 3 OF H.R. 2840

My foremost concern with this legislation is over section 1418A(b). This section establishes a tap water lead level (TWLL) of 10 ppb which, if exceeded by only one sample, will trigger corrosion control and lead service-line replacement for the entire water system. This is a standard that cannot be met even by our member companies already performing corrosion control. It is also very unlikely our member companies with no lead service lines could meet it. Tests have shown that some brass faucets by themselves can leach sufficient lead in six to eight hours to cause a first draw, one liter sample in excess of 10 ppb even with corrosion control.

For example, my company recently performed voluntary sampling at a school district in St. Louis County. We tested 476 drinking water samples from faucets and drinking fountains. Only three first draw samples exceeded the action level of 15 ppb established by the EPA rule while eleven exceeded the TWLL of 10ppb.

In the example cited above, none of the twenty-two individual schools are served by lead service lines and the water supplied has been subjected to corrosion control treatment including lime softening. The tap water has a pH of greater that 9.0 and has alkaline characteristics that deposit a thin coating of calcium carbonate on the inside of pipes. This treatment forms a protective film on the interior surface of the pipe materials rendering leaching impossible. We fully expect similar results at the remaining schools in our service area and at resident sampling sites to be included in the monitoring requirements established by the EPA rule.

The difference between the 15 ppb action level and the 10 ppb TWLL is not a question of stringency and public exposure levels through drinking water. It is instead a question of which parameter best serves as a measure of optimization of corrosion control. Based on our data, the LCCAA's TWLL of 10 ppb is not reflective of optimizing corrosion control.

There is a risk in establishing an impossible-to-meet measure of corrosion control treatment. It may discourage such treatment that might otherwise be installed were a realistic measure used. If a water supplier knows that any corrosion control treatment cannot meet the TWLL, why go to the expense in the first place? A 10 ppb TWLL will not distinguish between systems that have optimized corrosion control and those that have not.

Other provisions of the legislation also give me pause. Section 1418B reduces the time allowed for corrosion control from six to three years. The milestones established by this section ensure that any water supplier conducting corrosion control will fail to comply with this shortened timeframe. For example, it takes, at the very minimum, twelve months to perform a corrosion control study to assess effectiveness during different seasons and changing water quality. H.R. 2840 allows just twelve months from enactment for completion of studies, forcing shortened studies in order to provide time for planning, design, start-up and so forth.

Corrosion control is already performed as a matter of course by many water suppliers nationwide. Not only can it reduce lead levels, but it also lengthens the life of the pipes. However, as I mentioned above, the TWLL not only triggers corrosion control after only one exceedance, but lead service line replacement as well. Lead service line replacement can be triggered several ways - including a State's failure to designate optimal corrosion control. Systems have, with few exceptions, only five years to replace all of its lead service lines.

This timeframe is unworkable. I would recommend instead that each water system develop the shortest timetable feasible for lead service line replacement. Development of such a timetable will take into account factors including system size, number of service lines to be replaced, the impact on rates, the extent and magnitude of exceedances of the TWLL and risk reduction effectiveness. Such a timetable would be subject to approval by the State primacy agency.

Another issue of considerable concern to the NAWC is the definition of "control" of lead service lines. Sections 1418E(d) and (e) require water systems to replace the entire lead service line if under the systems "control". "Control", however, is defined much more broadly than ownership and will make systems responsible for the replacement of lines they do not own.

Many systems may, for a variety of reasons, offer to replace those portions of the line they do not own. In most cases, this replacement will be performed at cost. But I cannot imagine a scenario where any water supplier will welcome preemptive federal legislation requiring replacement of lines it does not own. Such a requirement strikes me as unfair and may be an illegal taking of private property.

Mr. Chairman, the public education notices found in the bill are alarming and sensational. The very first sentence of the prescribed notice states "The drinking water supplied by (insert name of water supplier) has been...found to be contaminated with the toxic chemical lead". The implication is, of course, we are poisoning our customers. Not only is this deceiving - the lead could be coming from their own plumbing - but it may subject our members to litigation outside the purview of the SDWA. Such language could be construed as an admission of guilt that we are poisoning our customers.

Finally, section 1418E(i) entitled Voluntary Lead Pipe Removal, encourages our members to enter the banking field. Under this provisions, systems are encouraged to offer to fund removal of lead plumbing, fixtures and solder and be repaid over a "period of time". The cost of such removal per house can range between thousands and tens-of thousands of dollars depending on the size and age of the home. Water suppliers are already struggling financially to meet the mandates of the SDWA. The responsibility to fund plumbing removal lies squarely with the homeowner not the water supplier.

LOSS OF PRIMACY

One of the unintended consequences of H.R. 2840 may be the loss of primacy by numerous states. Under SDWA, the determination of the loss of primacy is established by regulation. Under the LCCAA, primacy is "promptly withdraw(n)...in the case of any State which is not fully implementing the requirements of this title". In other words, requirements for States to retain primacy have been greatly increased.

According to the GAO, even without the lead rule, many states are already in danger of losing primacy. The LCAA would greatly expand this danger. The Agency clearly cannot afford to assume responsibility for primacy. As if to underline this point, OMB Director Richard Darman testified last week that he has ordered all executive agencies to submit FY92 budgets five percent below current budget authority in order to keep the budget within outlay caps. One can only conclude that if States lose primacy to an already underfunded EPA, implementation and enforcement of SDWA will completely cease - a result that is in no one's interest.

CONCLUSION

Mr. Chairman, the health effects of lead are a serious matter that must be addressed. The EPA rule, although not perfect, was a reasonable compromise for achieving reduced lead levels in drinking water. In comparison, H.R. 2840 as currently crafted is unworkable.

We encourage the Congress to allow the EPA's lead rule time to produce results. Further steps to reduce lead exposure must be judged in light of the experience and information gained through this process.

I am grateful for this opportunity to testify before you today and am happy to answer any questions you may have.

Mr. **Waxman**. Thank you very much, Mr. Gloriod, and gentlemen, for your testimony.

I must say that I'm more than a little disappointed with the tenor of the comments of the water supply industry and the State authorities, sharing responsibility for drinking water protection. While I understand the fiscal constraints and the plea for greater Federal moneys, a matter which I believe Congress must be responsive to, I'm at a loss to understand the general opposition to taking steps that are clearly needed for protection of the public health.

To hear your testimony, one would not think that drinking water contamination with lead is a particularly serious problem in this country, but the facts reveal a very serious problem. EPA studies conclude that 240,000 children each year are having their IQ's lowered as a result of lead contamination. Doctors have informed the subcommittee that babies are being lead poisoned as a result of contaminated water in their infant formula.

In the past month, the lead problem was the subject of a cover story for Newsweek, which I will hold up for you in case you haven't seen it, and, more recently, drinking water contamination is treated on the cover story for U.S. News & World Report. But somehow the importance of this problem seems not to have taken hold among the water supply industry.

In this legislation, we have taken steps to address the concerns for the industry as it was previously voiced to us. We have eliminated the MCL for lead at the tap; we have made clear that in no case will water suppliers be held accountable for lead contamination beyond their control, asking only that each system do all that it can to reduce lead exposure; we have provided a lengthy extension of the lead service line replacement schedule to accommodate the concerns of cities with large numbers of service lines.

When the Association of Metropolitan Water Agencies testified on lead 3 months ago, the witness, Mr. Wickser, of the Los Angeles Department of Water and Power, described elements he thought were important in a legislative effort to deal with this issue. He expressed support for an MCL in the system like the one included for source water in H.R. 2840. He expressed support for service line replacement as rapidly as possible, and we have provided for that in H.R. 2840. He expressed the concern that water suppliers should not be held responsible for sources of lead beyond their control, and this bill is very clear: Once a system has done all that it can—service line replacement, corrosion control, public education—it should be required to do no more; but it should be required to do at least that. And Mr. Wickser expressed concern with an MCL at the tap. He said: "The problem is, the MCL's standard at the tap continues to convey the impression to the public that the water supplier will take care of them." He didn't want the public to get the impression that, because there was an MCL, all was within the water system's control. In a major departure from our past position, in deference to this concern, we eliminated the MCL at the tap, replaced it with a new term, the "tap water lead limit," which does not carry the baggage that the MCL phrase carries.

Mr. McMullen, can you please identify for me any areas where we did not respond to the AMWA's concern as outlined by Mr. Wickser?

Mr. McMULLEN. To the best of my information, I feel that you probably have. The things that we have identified today primarily are dealing with the time lines on the implementation schedule and, in particular, the one sample trigger on the tap water lead level. That one sample trigger is something that is new, at least in my information and knowledge, that was not available to my colleague from Los Angeles at that time.

Mr. WAXMAN. Are those the two issues then, the time line and—what was that last one?

Mr. McMULLEN. The time line——

Mr. WAXMAN. The single sample trigger. If we dealt with those two issues, would we have met the requirements that the AMWA has suggested would be important for legislation?

Mr. McMULLEN. Well, we also have the other issue of the PQL——

Mr. WAXMAN. Well, wait a second. You just said you had two issues. Today you have a third issue.

Mr. McMULLEN. Well, I apologize.

Mr. WAXMAN. You see, the point that I am trying to make to you is that we had your witness from your association here; he spelled out the things he wanted; we met each one of those points, as you admitted today. Now you mention there are two, and three, and it seems to me there is a growing list of demands that keep on coming up ad hoc. These additional problems seem to convey the message that what you really want is for Congress to do nothing about lead contamination; instead, you favor the EPA regulations that will not provide protection for 20 years and even then will leave 10 percent of the population wholly unprotected.

Mr. McMULLEN. I think in my testimony I have said that we are very supportive of a lot of the features that are contained in the bill. We listed five issues today that were new to us that we are just responding to—to the legislation that you drafted. We are trying to come up with something that we feel is in the best interests of not only the utilities but the public, provides good quality water, protects us on lead, but yet doesn't provide an overburden on either the public or the utility industry.

Mr. WAXMAN. Well, we will continue to try to work with you on this, but let me go on to some specific issues.

Mr. Gloriod, in your testimony you express a preference for the EPA regulation over the approach of this bill. Is that correct?

Mr. GLORIOD. That is correct.

Mr. WAXMAN. Okay. EPA's regulations have a 15-year timeframe for service line replacements in any water system, regardless of how many or how few service lines the system has. Does it make good sense to you that every system in the Nation should take as much time as a city like Chicago, which has more than 450,000 lead service lines? Does it make sense that it should be 20 years before children over the whole country are protected from lead contamination just because of the problems in Chicago?

Mr. GLORIOD. I think case-by-case determinations in every city are going to argue for different time frames.

Mr. WAXMAN. The EPA approach gives the same time frame for 15 years. I think it would needlessly condemn millions of children to unnecessary lead exposure. What we have tried to do in our bill is provide for service line replacement as quickly as possible, and that will be different for different areas. That means granting an extended time frame only for municipalities with very large numbers of service lines. Others would have to replace those service lines much more quickly. What is wrong with that?

Mr. **Gloriod**. The central focus of our objection really is the single sample trigger that will perhaps instigate service line replacement when other ways could be used to reduce lead contamination.

Mr. **Waxman**. Your testimony is that you prefer the EPA regulations that allow 15 years for everybody. But as I heard what you had to say a minute ago, you don't think 15 years is really necessary for many of the water systems in this country to replace their service lines.

Mr. **Gloriod**. I have to look at both of them together. The issue of lead service line replacement has to be looked at in the time frame allowed and also what is going to trigger that lead service line replacement.

I think under a single sample, 10-part-per-billion trigger, more and more and more lead service lines will be called for replacement than perhaps the number of lead service lines under the EPA rule, and so, again, I think that——

Mr. **Waxman**. So you think it would call for more service lines to be replaced.

Mr. **Gloriod**. I do.

Mr. **Waxman**. But isn't that service lines that are contributing to the problem of lead contamination?

Mr. **Gloriod**. From the data that I have seen and from even some of the data that was given by a witness earlier this morning, it is clear that much of the lead problem is at faucets and fixtures and is not a part of the service line.

Mr. **Waxman**. We are not talking about faucets and fixtures, we are talking about service lines, and the provision says:

> A system is not required to replace an individual lead service line if a State determines, after notice and opportunity for comment, that the service line does not contribute—the service line does not contribute—to the water lead concentrations in excess of 10 parts per billion. In such a case, the service line shall be treated by the system as a nonlead line.

We are not talking about in the homes, we are talking about the service lines. Shouldn't they be replaced?

Mr. **Gloriod**. Not if they are not contributing to the problem.

Mr. **Waxman**. The provision says they are contributing to the problem. If they are not contributing to the problem, we don't disagree.

Mr. **Gloriod**. If they are contributing, then yes.

Mr. **Waxman**. Then you agree, if they are contributing to the problem, they should be replaced.

Mr. **Gloriod**. Yes.

Mr. **Waxman**. Okay.

Mr. **Sikorski**. Mr. Chairman, would you yield?

Mr. **Waxman**. Yes, certainly.

Mr. **Sikorski**. You can't object to the bill that does what you want to be done. Now I know there is a whole bunch of old opposition to doing something here, and if you have got problems with the mechanics or problems with the concept, substantive problems with the policy, bring them out. But this idea that you are against H.R. 2840 because it will unfairly, and wrongly, and stupidly pull up service lines that don't contribute to the lead problem is not accurate. The bill states specifically, "Service lines not contributing to violation shall be treated by the system as a nonlead line and not have to be pulled." We are all in agreement; that is what the bill says. So don't, again, lodge against this legislation an argument that doesn't apply to this legislation.

Thank you, Mr. Chairman.

Mr. **Waxman**. It just seems to me that you gentlemen would prefer the EPA regulations I understand why you might prefer it, because it gives you so much time and it is so much looser, but I don't think that regulation makes sense. We are trying to fashion something that is going to protect the public, especially children, from lead contamination much earlier. So help us draft a bill that you can live with and work with and makes sense, because you can't say it is this or that. If you are going to give us requirements that you want changed, if we are going to change them, then we want you to understand that they are changed and not to come up with more objections just to stall the process.

Mr. Parrish, I want to direct this to you. I was very surprised by your opposition to a requirement that States must implement the Safe Drinking Water Act as a condition of primacy. This is the way the act is supposed to work. As I understand, that is the way all these environmental laws work, that the States are given the authority to enforce the laws, and if they are not doing it, then the Federal Government will come in and take away their primary responsibility. Can you provide an example of any other environmental law where States are allowed to be delegated primacy authority without implementing the law?

Mr. **Parrish**. No, I am not.

The position of ASDWA is that specifically stating in this proposed legislation that EPA shall withdraw primary specifically for lack of full and complete implementation of this act.

Mr. **Waxman**. What is wrong with that?

Mr. **Parrish**. Well, there is nothing wrong with that if you can accept the fact that, if that is a requirement, that the States will have to give up primacy.

Mr. **Waxman**. No, no. Except the fact that the States are supposed to enforce the law. Can you accept that fact? It sounds to me like you are saying because the States don't enforce the law they still shouldn't lose primacy. But if you are not enforcing the law, why should we let the States act as the primary ones responsible when the law says they have to do it in compliance with the Federal requirements?

Mr. **Parrish**. The situation is, with the current regulations, the States are required to have the authority to implement the regulations. There are extension opportunities given to the States, and they are allowed the time to develop the resources necessary to implement the rules.

The way this act is written, the States will immediately have to begin putting all of their resources into implementation of this act and will not be able to implement any of the other requirements under the Safe Drinking Water Act, and the public health protection across the country provided by State drinking water programs will come to a halt.

Mr. **Waxman**. Wait a second. Are you telling me the States aren't supposed to enforce all the drinking water law? The States are responsible for the whole act itself, the Safe Drinking Water Act, and you are supposed to be in charge of meeting all the requirements of the law, and if you are not in charge of doing that, then the States lose the authority to conduct the program. Why are you telling me the States can't enforce the law?

Mr. **Parrish**. Given the resources provided by the Federal Government and the State governments, the drinking water Agencies are doing the best job that they can with the money——

Mr. **Waxman**. Well, let me ask you about the best job they can, because this article in the cover story of U.S. News & World Report quotes Dr. Jim Elder, the EPA's new drinking water chief, and he says 48 to 49 States are failing to adequately enforce existing regulations. Does that sound like that is the best the States can do when 48 or 49—as I last recall, there are only 50—States aren't even living up to the requirements of the law? This doesn't sound like a very satisfactory way to conduct your responsibilities. Is that acceptable?

Mr. **Parrish**. Given the resources that the States have to use from Federal and State sources, they are doing the best job that they can. Passage of this act would absolutely sink all the State programs.

Mr. **Waxman**. I think then, if resource constraints are the problem, we ought to talk about what we can do to help on resources, but it seems to me that the Safe Drinking Water Act is not just something that is a bureaucratic responsibility that is unimportant, it is a legal requirement set in place to protect the drinking water consumers in your State, and during my time here in Washington, D.C., I happen to live in your State of Maryland, and I hate to think that I come to work and drink drinking water that is filled with lead and then go home in Maryland and find out that the drinking water supply may not be meeting all the requirements of the Federal law either.

The problem I see is really one of missed priorities. Clearly, we must make drinking water protection a higher priority if the public health is to be protected. If this means that some States are going to lose primacy, as far as I am concerned, so be it, as unfortunate as that might be.

Mr. Olson, do you want to comment on this?

Mr. **Olson**. I would like to comment just briefly.

As you may know, EPA's rules had always said that EPA shall withdraw a State's primacy if the State was not complying with all the requirements in the act, and we threatened to sue EPA because of the situation you describe, because so many States were not complying with the act.

EPA's response to that threat was not to improve the compliance of the States but was, rather, without notice and comment, to simply issue a rule that says, well, "shall" now means "may;" we now have the discretion not to withdraw a State's primacy even if the State is blatantly illegally implementing the act. We challenged that in court, and EPA the day of the oral argument said that it was going to revisit this since it hadn't gone through notice and comment. They now have issued exactly the same rule.

So right now, under EPA's rule, which is still subject to challenge in court, EPA could simply ignore illegalities in the State no matter how gross they are.

Mr. **Waxman**. Well, that is a fine commentary to the American people about how their drinking water is being protected.

Mr. Sikorski.

Mr. **Sikorski**. Thank you.

On that, Mr. Parrish, the quotation is—EPA new drinking water chief—"48 to 49 States are failing to adequately enforce existing laws," and yet in statements that are made by the people who are responsible to enforce the laws and people delivering the water, in public whenever a reporter or someone raises the question with the data, with the testing results, there are always these very generous comments about the health and the safety of the water. Tell me if the EPA drinking water person is saying 48 to 49 States aren't enforcing adequately the law, and we are aware of EPA's reluctance to push. If they are admitting this, why does everyone keep making these generous statements about the safety of the law and telling people, "Don't worry; be happy"?

Mr. **Parrish**. Again, all I can tell you is that the States are doing the best job that they can in prioritizing their activities.

Mr. **Sikorski**. Then I think every State health or drinking water expert and all the local drinking water experts should put a little condition or caveat on their statement to the public, trying to reassure them that everything is fine, by saying:

> Under the resources that we have, and in violation of the Safe Drinking Water Act and the Clean Water Act and all the rest of it, we think the water is as safe as we can get it at this point.

That is the honest statement, and it would be refreshing to hear it instead of the statement made to Members of Congress and the public when they ask legitimate questions about safe water and are told everything is fine.

Mr. McMullen, you also expressed support for the EPA rule. This gets to the issue we talked about on hazardous lines. It is the EPA rule that 90 percent is okay, and the fairness of the new line now, we are hearing, is: "Why should one bad house cause us to rip out a line, a leaded line?"

One aspect of the rule that I find especially problematic concerns the details of the lead service line replacement program, the target of the tax. Under the regulation, if a water supplier tests a service line and finds that the lead concentration within the line is less than 15 parts per billion—that is, say, 13 parts per billion—the line need not be replaced. Even worse, the water system gets to count that line as a line that has been replaced under its 7 percent per year requirement for service line replacement. Explain to me the logic and the reasonability of that.

Mr. **McMullen**. I don't remember that I made the statement that I was supportive of the EPA rule. I think I identified there were a couple of spots within the proposed legislation that I had a problem with, in particular the one sample trigger.

In any analytical work that we do in a laboratory of a water utility, if we end up with one sample that is bad, that usually requires us to resample and try to find out what really is causing the problem, and I am not here to basically say—I am not a health expert—to basically say that 10, 15, 13 micrograms per liter is a safe level. I think that is the health effects people that really need to make that type of decision.

Mr. **Sikorski**. So you are not in support of the EPA rule?

Mr. **McMullen**. I am here today to basically comment on the legislation that you have. I am supportive of a lot of the features that are contained in it. It parallels the EPA rule in a lot of places. There were five positions that I felt could be refined to make it even better, and that is my comment.

Mr. **Sikorski**. Thank you.

Mr. Gloriod, you are in favor of the EPA rule.

Mr. **Gloriod**. I am in favor of the EPA's rule as it compares to your bill in section 3.

Mr. **Sikorski**. Oh, you don't like the EPA rule either?

Mr. **Gloriod**. I think we indicated in our testimony the EPA rule is not a perfect rule. We have a lot of problems with the EPA rule.

Mr. **Sikorski**. Because it is too strong or not strong enough?

Mr. **Gloriod**. It is confusing.

Mr. **Sikorski**. Tell me, do you support the 7 percent per year requirement?

Mr. **Gloriod**. I don't know that I support that or not.

Mr. **Sikorski**. Do you support being able to count dirty lines that are less than 15 parts per billion as lines that have been cleaned up just because they have been tested and found less than 15 parts per billion?

Mr. **Gloriod**. The objective of the rule is to replace lines that are contributing, and if lines are shown not to be contributing, then why replace them?

Mr. **Sikorski**. They are contributing, they are just not contributing over 15 parts per billion.

Mr. **Gloriod**. And if 15 is the trigger in the rule——

Mr. **Sikorski**. You change the discussion again, and that is how absurd this provision is. I am not saying they should be replaced. I am saying, should they be counted as being replaced if they are not replaced?

Mr. **Gloriod**. Why not?——

Mr. **Sikorski**. Why not? Because they are not being replaced.

Mr. **Gloriod**. Then it is a definitional problem.

Mr. **Sikorski**. It is a definitional problem to you, but for me and for the American people it means leaving hazardous lines in place longer, not only the one that has been tested and comes in a little under the magic EPA 15 parts per billion, but another line which does come over the 15 parts per billion doesn't get pulled because this tested but unreplaced line gets treated as a replacement line. That is why not.

Mr. **Waxman**. Would the gentleman yield?

Mr. **Sikorski**. Sure.

Mr. **Waxman**. To put this thing in perspective, the rule, as I read it, says if a line is under 15 parts per billion—let's say it is 13 parts per billion—the line doesn't have to be replaced. All right, so it doesn't have to be replaced. If you don't replace it, then you count it as if it were a line that was replaced, and if you count it as a line that is replaced and you say that there's only 7 percent per year that you have to replace, then you could count those lines you didn't replace as lines you replaced, and then, when you get to the point of lines that must be replaced, it could be many years down the road.

For example, a city where 70 percent of the service lines are 15 parts per billion could escape having to deal with the 30 percent that deal with the biggest problem for 10 years. That doesn't make sense to me. Does that make sense to you, Mr. Gloriod?

Mr. GLORIOD. If I look for some rationale in that, the only rationale I can come up with is that the rule is aimed at primarily eliminating problems that are due to lead service lines and doing that over some scheduled basis, percent basis.

Whether the lead line is eliminated because it is replaced or because it is measured and found to be okay is counted the same way.

I didn't write the EPA rule. I mean I am guessing at what the rationale is in that rule. If you look at it from a public exposure standpoint——

Mr. WAXMAN. You are supporting that rule, and that is why we are picking on you on that rule. You didn't draft the rule, but you are supporting it, and I don't think it is supportable, because if you have 30 percent of a city's water supply that is very dangerous, you should replace it, not say you don't have to get to it because 70 percent is not so bad yet and you can count that in this crazy definition as replaced because it is not so bad that it needs to be replaced. That just defies logic, defies the understanding of the English language, and it defies any sense of trying to protect the public from the 30 percent that should be replaced up front right away, not later on, in order to make sure that we get the reductions in the exposure to people.

Mr. GLORIOD. I understand your objection, sir.

Mr. WAXMAN. Mr. Sikorski.

Mr. SIKORSKI. I may be late, but let me just leave with a comment. In the AMWA testimony, "The members provide safe, high quality drinking water directly to over 75 million people and directly to an even greater percentage of the population through wholesale supply," and then in your testimony, Mr. Gloriod, you say, "Our member companies proudly provide safe, reliable drinking water to 22 million Americans every day."

Under the Safe Drinking Water Act, you are required to test for lead, right?

Both of you are nodding, yes.

Mr. GLORIOD. Yes.

Mr. MCMULLEN. That is right.

Mr. SIKORSKI. And when you find lead, you are required by law to notify the public of that.

Mr. GLORIOD. Yes.

Mr. SIKORSKI. It was the inspector general's report, or the study done is that 90 percent of your departments, your local groups that are providing this water, are in violation; they don't notify the public of the lead problems. Do you still feel good about "proudly providing"?

Mr. **McMullen**. The AMWA members are providing basically under the current MCL rules that are available, and that is what we are after. The work that we have done at the Des Moines Water Works shows that the majority of the lead is being picked up in the homes within the plumbing fixtures and in the piping within the home, which is beyond our control, and under the current rule our sampling point is within the distribution system of the water that we are supplying.

Mr. **Sikorski**. I think there is going to be a truth-in-labeling squad and it is going to hit your people hard unless you get on the right side of cleaning this up.

Your job is tough; your resources are limited; you are trying to account for bugs and make sure a whole bunch of things don't get into the water, besides smell and taste, and cater to every taste that is out there; you have got a tough job. But this lead is an important health risk, and it is a health threat that you are going to have to respond to, and you can either be behind prime time, under the 60 Minutes telescoping camera lens, on the front cover of one of the news magazines, or you can try to keep up with them, because I assure you, in apples and cake mixes and everything else, when the public gets nervous, really nervous, they come down hard, and their regulation—not EPA's, not ours—their regulation is pretty crude, and your people will pay for failure to respond to this problem, and I hope you can work with us, and not against us, in formulating something that we can all live with.

Mr. **Gloriod**. Mr. Sikorski, if I might, I think the NAWC has long supported the goal of monitoring even beyond those things that were regulated under the Safe Drinking Water Act to know as much as is able to be known about the quality of our water supply and informing our customers through voluntary mailing of brochures, and I think our position is exactly the same on lead. I subscribe to the "right to know" comments of this morning's testimony that we need to know the quality of our waters, we need to monitor it, and our customers need to know.

Mr. **Sikorski**. Thank you.

Mr. **Waxman**. Thank you, Mr. Sikorski.

Mr. Olson, I am just astonished at this authority that is provided for this, calling something replaced when it hasn't been replaced. Do you want to comment on that?

Mr. **Olson**. Well, it just defies explanation from our standpoint. There is no reason to treat something that hasn't been replaced as replaced. It speaks for itself.

Mr. **Waxman**. The SDWA certainly has a basic approach and philosophy that all water consumers are to be protected. Mr. Olson, what is your view of the provision leaving 10 percent of the population unprotected?

Mr. **Olson**. We are very concerned about that. That was one of the primary reasons that the Natural Resources Defense Council, which I am shortly to move to, has challenged the lead rule that up to 10 percent of the tested tests will simply be exempted from the requirements of the act. We are concerned that what that will mean is that the worst 10 percent of the homes in many communities may not be protected whatsoever in perpetuity under the rule, and there is simply no justification for that.

I would like to respond to the argument that one bad apple doesn't spoil the whole bunch, the notion that only one house being tested would trigger all these requirements. There is not going to be any requirement to replace all the lead service lines in the entire community if just one house has a problem; you only have to replace lead service lines under the provision that you just read if the lead service line is contributing to a violation. So you don't have to pull up all the lead service lines just because one house is bad. So I think that is a red herring of an argument.

Mr. **Waxman**. Before we conclude, does anyone else want to add something to the discussion?

Mr. Wennberg?

Mr. **Wennberg**. I would just like to make sure there is no misunderstanding that the position of the National League of Cities is not, in any way, shape, or form, in opposition to this legislation, and in many respects this legislation is substantially better than the EPA rule, and the fact of the matter is, 100 percent of U.S. citizens live at the local level, and local officials are absolutely no less concerned. Speaking for myself, I have a 2-year-old daughter and another child on the way in November. I suspect that I could present that as evidence of perhaps being at least as concerned as the people here on your committee and the various people responsible for sharing the responsibility for protecting the public health and safety.

We stand ready and look to you for leadership, to work with you to make these new levels a reality for, yes, 100 percent of American citizens. What we look for is leadership and flexibility, just a little flexibility and recognition of the fact that not all our communities are the same, the problems won't be the same everywhere, and there will be opportunities for solutions which will differ from one community to another.

If we can work with you to incorporate that flexibility, I think you will have resulted in crafting a piece of legislation that will go a great distance to protecting the health of the people of this Nation.

Mr. **Waxman**. Thank you very much for those comments. I think that is a good way to end the hearing, on an upbeat note.

Let me just say to all of you, it is our purpose, and I think we share the same purpose, of trying to protect the health of the American people in a fashion that is reasonable. We will continue to try to—try to, even though it gets discouraging maybe for all of us, both of us—to work out the provisions of this legislation. Thank you for being here.

That completes our hearing today, and we stand adjourned.

[Whereupon, at 3 p.m., the hearing was adjourned.]

[The following material was submitted for the record:]

BENJAMIN L. CARDIN
3D DISTRICT, MARYLAND

COMMITTEE ON WAYS AND MEANS
SUBCOMMITTEE ON HEALTH
SUBCOMMITTEE ON SOCIAL SECURITY

ASSISTANT MAJORITY WHIP

Congress of the United States
House of Representatives
Washington, DC 20515

REPLY TO
☐ 507 CANNON HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-4016

☐ 540 E. BELVEDERE AVENUE, SUITE 201
BALTIMORE, MD 21212
(301) 433-8886

☐ 754 FREDERICK ROAD
CATONSVILLE, MD 21228
(301) 788-2041

☐ 412 S. HIGHLAND AVENUE
BALTIMORE, MD 21224
(301) 563-9177

TESTIMONY BY REP. BENJAMIN L. CARDIN
BEFORE SUBCOMMITTEE ON HEALTH AND THE ENVIRONMENT
ON LEAD CONTAMINATION CONTROL ACT
JULY 26, 1991

Mr. Chairman, I want to commend you for your continued interest in the issue of lead poisoning among our nation's children and for your leadership in introducing the Lead Contamination Control Act. I was pleased to join with you as an original cosponsor of this legislation.

I have a very parochial interest in lead poisoning. I represent part of the City of Baltimore. Studies -- by the Environmental Protection Agency and the Environmental Defense Fund -- suggest that one out of two children under the age of six in Baltimore are at risk of lead poisoning. The families and communities of Baltimore can no longer afford or tolerate the poisoning of our children.

Unfortunately, every Member of Congress shares this parochial interest. We now know that one in every six children in the United States has a dangerous level of lead in his or her blood. This is not just a problem of the urban poor. Lead-based paint is present in urban and rural areas throughout the country and it does not discriminate between the homes of the rich and the poor. Like Baltimore, the entire country cannot afford the price of continued neglect.

I would like to speak to one specific aspect of your legislation -- mandatory notification. One week after I joined with you as an original cosponsor of H.R. 2840 I got a call from a constituent. This woman was in the process of buying a home in Baltimore. Prior to closing she twice asked her realtor whether the contract should be conditioned on the outcome of a test for lead paint. The realtor assured her that such a thing was unheard of and unnecessary. As a first time homebuyer she trusted her realtor and signed the contract.

Later, she asked to amend the contract to condition the sale upon the outcome of a lead paint test. The seller balked. Because the house is 80 years old, it very likely contains lead-based paint.

This woman is pregnant and has a 3 year old son. She and her husband planned to renovate this house to create the space their young family would one day need. But now she has an estimate from a contractor for an abatement she cannot afford. Worst of all she has a contract on a new home she fears could threaten the health of her children.

And, of course, now she has a lawyer.

This woman is unusual in that she had heard of the risks of lead-based paint. Unfortunately, like most people, she did not understand the very real health and financial costs of lead-based paint.

Mr. Chairman, there is nothing surprising about this story, except that it came to my attention. This scenario plays out in one way or another every day throughout the country. All this family needed to protect their children and their investment was some timely information. Your legislation would ensure that in the future homebuyers would have this vital information.

Of course, even if this family had had the information they needed and had bought another home, Baltimore would still have a house that very likely contains lead-based paint. What testing and disclosure requirements can do is protect families and increase public awareness of the risks associated with lead-based paint. What testing and disclosure requirements cannot do is get the lead out of our homes.

This is not a problem landlords can solve on their own. Most renters and many homeowners cannot solve this problem. The insurance companies and the lawyers cannot solve the problem. Ultimately, the 3 million tons of lead that remain in our nation's homes are a societal problem requiring a governmental response.

For this reason I have introduced H.R. 2922 the Lead-Based Paint Hazard Abatement Act. I am pleased to have Chairman Waxman and Mr. Sikorski of this Subcommittee as original cosponsors of this legislation.

H.R. 2922 provides for the only real cure for lead poisoning -- prevention. The bill establishes a trust fund of about $1 billion per year for use by states and cities to operate comprehensive programs addressing the most intractable source of high-dose lead exposure for children: deteriorating lead-based paint in low-income housing and child care centers.

This dedicated source of funds will be used to cleanup lead paint hazards in older housing, the primary cause of the epidemic of childhood lead poisoning which affects one out of every six american children -- causing IQ reductions, reading and learning disabilities, reduced attention span, hyperactivity and other learning and behavioral problems.

By generating revenues from an excise fee on lead, this legislation is consistent with the pay-as-you-go requirements of last year's budget agreement and will not increase the federal budget deficit. Funds will be allocated from this trust fund based on a statutory formula reflecting local needs in terms of poverty and lead paint health hazards. To receive grants each year under the formula, cities and states must match a portion of the federal grant and demonstrate their capacity to carry out an effective cleanup program.

The tax will be 75 cents per pound on newly mined lead and 37 cents per pound on recycled lead. The price of lead with the tax, however, will be roughly the same as it was a decade ago (adjusted for inflation). This two-tiered tax structure will provide strong incentives for expanded recycling of lead, a major environmental goal. Consumers will most frequently see this tax reflected in the price of a car battery which will increase by about $15. Since most car batteries last four to five years, the actual cost to the consumer will amount to only $3 per year.

I look forward to the constructive comments and suggestions of my colleagues and other interested parties for improvements in this legislation. It is incumbent upon those who would criticize the tax portion of this bill, however, to recommend a viable alternative. To suggest continued inaction is not an acceptable criticism of this bill.

The national mandate to wipe out lead paint poisoning was established by Congress 20 years ago. Since then little action has been taken as millions of American children continue to suffer from this fully preventable disease. Mr. Chairman, I believe our two bills represent a coordinated and comprehensive attack on the nation's epidemic of lead poisoning. I look forward to working with this Subcommittee to address this challenge.

WASHINGTON GOVERNMENT
AFFAIRS OFFICE
1825 K Street, N.W.
Suite 305
Washington, D.C. 20006
202/223-6222
202/785-0887 (FAX)

The National Association
of Full-Service Plumbing
Heating, Cooling and Piping
Products Wholesalers

American Supply Association
222 Merchandise Mart Plaza
Suite 1360
Chicago, Illinois 60654
312/464-0090
312/464-0091 (FAX)

Peter W. Schwartz
Executive Vice President

July 25, 1991

The Honorable Henry Waxman
Chairman
Health and Environment Subcommittee
Committee on Energy and Commerce
512 House Annex I
Washington, D.C. 20515

Dear Mr. Waxman:

I am writing on behalf of the American Supply Association (ASA) regarding H.R. 2840, the "Lead Contamination Control Act Amendments of 1991." ASA's specific interest is Section 14180(iii) which prohibits the sale of lead solder or flux by persons engaged in the sale of plumbing supplies.

As an alternative to the legislation, ASA suggests that your Subcommittee consider an absolute ban on the production of lead solder. Such a ban on lead solder production assures that lead solder will be eliminated from use on potable water systems. If there is a need for certain limited exemptions to a production ban for application where lead-free substitutes are not practical, exemptions could be determined by the EPA Administrator by regulation. It is our understanding that the only exemptions may be for electronics and defense applications. We are not aware of a need for any exemption for construction-related purposes.

The American Supply Association is the national trade organization for wholesale distributors in the Plumbing-Heating-Cooling-Piping industry. The Association has a membership of more than 1,100 firms with more than 3,000 locations.

Within the building materials industry, ASA members are generally referred to as plumbing wholesalers. However, such a reference is very subjective because the typical member will supply products for a variety of applications, such as electrical, heating and air conditioning, and sheet metal.

Although solder is sold by many of our members, ASA was one of the first national trade associations to actively support the 1986 legislation which prohibited the use of lead solder and flux on potable water systems. As a result of that legislation, manufacturers developed lead-free solders which are sold by our members for use in potable water systems. If lead solders are sold, they are intended for use in applications that are not related to potable water, e.g. refrigeration, hydronic heating, sheet metal, and waste disposal systems.

We support your objective of reducing exposure to lead. If lead solder is being used on potable water systems in violation of the law, we fully support further action to bring the use of lead solder to a halt. However, a simple ban on the sale of lead solder by plumbing wholesalers and others who sell plumbing supplies will be of limited benefit. Lead solder that can be used on water systems will continue to be available. H.R. 2840 is a flawed approach and will not meet your ultimate objective because of the nature of the building materials industry.

Solder is one of the many commodity products produced, sold and used in the building materials industry. Within the wholesale distribution segment of the industry, there are several types of product wholesalers that carry lead solder, including: plumbing, heating, refrigeration, electrical, water and sewer, industrial and irrigation wholesalers.

Because of the product mix in the typical wholesaler's inventory, it is impossible to classify a wholesaler as being only a wholesaler of plumbing supplies. A wholesaler who might be considered by some as primarily dealing with plumbing supplies might also sell products and materials for other applications, e.g. heating and refrigeration. A wholesaler who might be considered to be a heating wholesaler might also sell products for plumbing uses.

The same situation occurs with contractors. There are several types of contractors who use lead solder, including: plumbing contractors, heating contractors, roofing contractors, remodeling contractors, air conditioning contractors, sheet metal contractors and electrical contractors.

A plumbing contractor may also do heating and air conditioning repair and installation. And a heating or air conditioning contractor may also do plumbing work. A remodeling contractor might do the plumbing and electrical work, as well as building the additional room on to a home.

As the above discussion indicates, a ban on the sale of lead solder by wholesalers of plumbing supplies will not be effective in reducing the availability of lead solder for possible use on potable water systems.

In addition, lead solder will continue to be available from hardware stores and homecenters. There has been a significant increase in the "do it yourself" market, where the homeowner goes to the local homecenter, buys the material and does his own plumbing repair. Contractors also will on occasion use the hardware store or homecenter to purchase materials.

We strongly believe that the solder provision in H.R. 2840 will not significantly reduce the use of lead solder in water systems, but instead will result in arbitrary enforcement actions against wholesalers who carry lead solder for allowed applications. Any wholesaler who is considered to be a plumbing wholesaler would be unfairly restrained from selling lead solder for non-plumbing applications.

A complete ban on the production of lead solder is the only effective means of insuring that lead solder is not used on potable water systems. If exposure to lead in water is a significant health risk, then the Congress should enact a ban for all uses of lead solder where lead-free substitutes are available or could reasonably be developed.

Thank you for your consideration of our views. Please call on me or ASA's Legislative Advocate, Pat O'Connor (202-223-6222) if we can be of assistance.

Sincerely,

M. R. Tice
President

STATEMENT OF SAMUEL W. HURLEY, JR.
COMMISSIONER OF THE DEPARTMENY OF WATER
CITY OF CHICAGO

The City of Chicago operates one of the most advanced water purification and distribution systems in the country. Our system has frequently been held out as a model for the nation to follow. As such, the City of Chicago is very concerned about minimizing the sources of lead contamination in drinking water. We began increasing our corrosion treatment procedures to reduce the leaching of lead into the water long before such controls were mandated. And, we are constantly exploring new ways to further improve our corrosion treatment methods.

Earlier this summer, the United States Environmental Protection Agency (USEPA) issued new standards governing allowable levels of lead in drinking water at 15 micrograms per liter in 90% of samples taken. These new regulations represent a careful balancing of legitimate concerns over the health effects of lead in drinking water, with the ability of local governments and taxpayers to pay for modifications to drinking water infrastructure. While the City of Chicago is not in full agreement with the new USEPA regulations, we do feel they are at least reasonable and affordable, and we are prepared to comply with the regulations in every way.

However, shortly after publication of the new USEPA regulations, two bills -- H.R. 2840 and S. 1445 -- were introduced in Congress to establish even more stringent standards for lead levels in drinking water. As a responsible and concerned leader in the water industry, we are compelled to warn against the danger of an otherwise well-meaning but overzealous regulation of this important natural resource.

The USEPA guidelines on lead and copper were developed after exhaustive research was conducted with input from professionals on both sides of the health and service delivery issue. As a result, the regulations are practical by health standards, yet technically and economically reasonable enough to implement successfully.

On the other hand, H.R. 2840 and S. 1445 propose standards that are 50% more stringent than the new USEPA guidelines, without providing any compelling evidence that justifies such strict regulation. The economic hardships that will be imposed upon municipalities and taxpayers as a result of this proposed mandate are not justified by the insignificant health gains that may be realized a result.

Drinking water with a continuous lead concentration at the highest level acceptable under the new USEPA guideline of 15 mg/l would translate into a very small fraction of that level in terms of micrograms per deciliter of blood lead levels. According to a December, 1986 USEPA report entitled, "Reducing Lead In Drinking Water: A Benefit Analysis," less than 20% of lead contained in drinking water is absorbed into the bloodstream. At that rate, the benefit gained by lowering the acceptable standard from 15 mg/l to 10 mg/l is minuscule -- less than 1 mg/l. However, the economic impact of such a mandate would be enormous -- more than $1.5 billion in Chicago alone.

Lowering the standard to 10 mg/l in 100% of samples at first draw essentially guarantees that most utilities will be unable to comply within the allowable timeframe. Frequently, the source of lead in drinking water is not found in distribution systems, but in the supply lines and faucets within homes that contain lead pipes and solder. While concerted public education efforts and additional corrosion control methods will further reduce in-home exposures to lead, the proposed legislation leaves no room for variance. No amount of public education will affect the results of first draw samples.

The short implementation times set forth under the proposed legislation virtually guarantee that utilities and municipalities are forced to assume the extraordinarily high cost of replacing service lines. This sort of mandated expense, in the absence of additional funding sources, comes at a time when all levels of government are suffering from budget cutbacks. Such a mandate will cause unilateral non-compliance with the law.

If the intent of this legislation is to reduce or eliminate legitimate threats of lead contamination, there are far greater exposures to lead from other sources like dust and soil, lead-based paint, food and tobacco smoke. Considering the limited funds available for lead abatement efforts and the insignificant benefit gained by lowering the existing standard, the public would be much better served if our efforts were directed at greater sources of exposure.

COALITION FOR SAFE CERAMICWARE
3050 K STREET, N.W.
SUITE 400
WASHINGTON, D.C. 20007
(202) 342-8450

DAVID A. HARTQUIST
EXECUTIVE DIRECTOR

STATEMENT ON H.R. 2840, THE LEAD CONTAMINATION CONTROL ACT AMENDMENTS OF 1991

The Coalition for Safe Ceramicware ("CSC" or "Coalition"), an *ad hoc* association comprised of ceramic tableware manufacturers from around the world, offers these comments on section 5 of H.R. 2840, the Lead Contamination Control Act Amendments of 1991.

Section 5, entitled "Lead Contamination in Food," contains three provisions of direct relevance to manufacturers of ceramic tableware. First, section 5 would amend section 402 of the Federal Food, Drug & Cosmetic Act ("FD&C Act") to provide that a food shall be deemed to be adulterated, "[e]ffective 24 months after the date of the enactment of this paragraph, if it bears or contains any lead, unless the Secretary has determined, by regulation, that the level of lead borne or contained by the food is safe within the meaning of section 409." Second, section 5 would add a new section 413 to the FD&C Act requiring the Secretary of Health and Human Services (through the Food and Drug Administration ("FDA")) to "promulgate regulations to establish such standards and testing and certification procedures with respect lead in ceramic ware . . . as is necessary to make food that contacts such ware safe within the meaning of section 409," such regulations to be issued within one year of the date of enactment. Finally, section 5 would add to the list of "prohibited acts" proscribed by section 301 of the FD&C Act "the introduction or delivery for introduction into interstate commerce of any ceramic ware . . . that has not been certified by the Secretary as in compliance with regulations under section 413," effective 24 months after the date of enactment.

The CSC has a direct interest in all of these provisions. For more than two years now, the CSC has been working with FDA to provide the agency with data relevant to its proposal to reduce the federal release limits for leachable lead in ceramic tableware products. *See* 54 Fed. Reg. 23485 (1989). Thus far, the CSC has filed two major submissions with FDA, as well as a number of shorter supplemental submissions, based on an extensive program of extraction testing and data on consumer usage patterns that are designed to provide the agency with the means for making a reasoned judgment as to the maximum level of leachable lead in ceramic tableware that is consistent with public health. FDA recently announced in its unified regulatory agenda that it plans to issue final regulations addressing the release limit for ceramic food service pitchers in early 1992.

Given that FDA is already well on the way to issuing lead release limits for ceramic tableware products, the CSC has no objection in principle to the bill's call for the agency to issue "standards and testing . . . procedures with respect to lead in ceramic ware" within 12 months of the date of enactment. Nor does the Coalition object to the bill's prohibition, beginning two years after the date of enactment (and one year after issuance of the FDA's regulations), against the sale of ceramic tableware that fails to comply with the lead release limits. The Coalition does, however, object to several other elements of the proposed legislation.

Proposed Section 402(g) of the FD&C Act is Unnecessary

As an initial matter, the Coalition fails to see the need for proposed section 402(g) of the FD&C Act. Under that proposed amendment, "[a] food shall be deemed to be adulterated . . . [e]ffective 24 months after the date of the enactment of this paragraph, if it bears or contains any lead, unless the Secretary has determined, by regulation, that the level of lead borne or contained by the food is safe within the meaning of section 409." If this provision were applied literally, virtually the entire U.S. food supply would be deemed adulterated (inasmuch as *some* lead is present in almost all foods) unless and until FDA could issue individual regulatory tolerances for lead in each and every food product. There is no good reason to subject the agency to this herculean task. Section 402(a)(1) of the Act already provides that "[a] food shall be deemed to be adulterated . . . if it bears or contains any poisonous or deleterious substance which may render it injurious to health." Lead is clearly recognized as a "poisonous or deleterious substance," and there is absolutely no doubt that the FDA has authority to proceed against food products containing lead in amounts sufficient to "render it injurious to health." The CSC submits that this is more than adequate authority to allow FDA to take action against food products that have been contaminated with lead, either through the use of improperly made ceramic tableware, or otherwise.

To the extent that the proposed amendment to section 402 is designed to designate foods containing *any* amount of lead as adulterated *per se*, unless the Secretary has specifically promulgated a regulatory tolerance for lead in that food pursuant to section 409, the CSC submits that the bill is placing an impossible burden upon both FDA and the regulated industry. As discussed below, the procedures of section 409 are clearly not the appropriate means for regulating lead in food and food contact articles. If proposed section 402(g) is not deleted from the bill as surplusage, the Coalition submits that it should be amended to incorporate the standard of safety employed in section 402(a)(1) of the FD&C Act. The specific language recommended is set forth below.

The Legislation Employs the Incorrect Standard of Safety

The new section 413 of the FD&C Act added by the bill would require FDA to issue regulations "establish[ing] such standards and testing . . . procedures with respect to lead in ceramic ware . . . *as is necessary to make food that contacts such ware safe within the meaning of section 409* [of the FD&C Act]." Similarly, proposed section 402(g) of the FD&C Act provides that a food shall be deemed to be adulterated "if it bears or contains any lead, unless the Secretary has determined, by regulation, that the level of lead borne or contained by the food is *safe within the meaning of section 409*." The CSC submits that these references to section 409 are in conflict with the original congressional intent behind the FD&C Act. The more appropriate standards of health are those employed in *section 406* of the Act ("necessary for the protection of public health") and *section 402(a)(1)* ("may render . . . injurious to health"), respectively.

Section 409 of the FD&C Act permits FDA to establish tolerances for "food additives" if such additives "may be safely used." 21 U.S.C. § 348 (1990). Section 409 was added to the FD&C Act in 1958 in order to establish a procedure by which FDA could *authorize* the use of food additives that could be demonstrated to be *safe*; the statute was not intended to provide a means by which *unsafe* food additives could be *prohibited*. There is, in fact, ample existing authority for FDA to ban unsafe food additives under sections 402 and 406 of the Act, which address "poisonous or deleterious substances" added to food.

FDA itself has previously recognized that section 409 does not properly furnish the agency with authority to regulate lead in food or food contact articles. In its 1974 notice of proposed rulemaking on the subject of poisonous or deleterious substances in food, FDA specifically noted that section 409 is not an appropriate basis for regulating lead contamination of food:

> When the Food Additives Amendment of 1958 [which added section 409] was enacted, the provisions of section 406 of the act were not repealed. Although all added poisonous or deleterious ingredients are food additives, except when they appear in food accidentally and unforeseeably or are exempted under section 201(s) of the act because they are otherwise regulated under the act, the tolerance-setting provisions of section 406 of the act were left intact to deal with those unavoidably added poisonous or deleterious ingredients that could not meet the high standards for issuance of a regulation under the authority of section 409 of the act. A number of added poisonous or deleterious substances, which are also food additives within the meaning of section 201(s) of the act, are unavoidable but cannot meet the requirements for a section 409 regulation because their safety cannot be demonstrated and because they serve no functional purpose. *A prominent example is lead, which was one of the contaminants most frequently mentioned in the legislative history of the 1938 act and one of the prime contaminants with which section 406 was enacted to deal. Lead cannot be the subject of a food additive regulation under section 409 of the act even at trivial levels because it serves no functional purpose. Section 406 of the act, therefore, remains in force to control the use of such substances, since there would otherwise be no statutory means available to recognize their unavoidability and to exercise reasonable control over their presence.*

Poisonous or Deleterious Substances in Food, 39 Fed. Reg. 42,743, 42,744-45 (December 6, 1974) (notice of proposed rulemaking) (emphasis added).

Based on this analysis, the CSC submits that the amendments made by section 5 of the bill to sections 402(g) and 413 of the FD&C Act should not reference the standard of safety employed in section 409 of the Act, but should instead utilize the safety standards found in sections 402(a)(1) and 406, as appropriate. The standard, in both cases, is essentially protection of the public health. Rather than expressly reference sections 402(a)(1) and 406, the CSC recommends that the new sections 402(g) and 413 simply adopt the language of sections 402(a)(1) and 406, respectively, without cross-referencing them. In the case of section 413, this will negate the inference that FDA must utilize the specific procedures of section 406 (and make the specific factual findings required under that statute) in issuing regulations to limit lead release from ceramic tableware. The specific language we propose is set forth below.

The Bill Should Not Require the Secretary to Establish "Certification Procedures" for Lead in Ceramic Tableware

Section 413 of the FD&C Act, as added by section 5 of the bill, would require the Secretary to establish not merely "standards and testing procedures with respect to lead in ceramic ware," but also "certification procedures" for such ware. Further, a new section 301(u) of the FD&C Act would ban the introduction into interstate commerce of any ceramic tableware product "that has not been certified by the Secretary as in compliance with regulations under section 413." Together, these provisions appear to envision FDA's active involvement in certifying industry's compliance with the lead release limits.

While the CSC appreciates the value of certification programs, whether administered by government agencies or voluntarily undertaken by industry, it believes that this is not an appropriate case for government involvement in certification efforts. The enforcement resources of FDA are already strained, and the agency hardly has the wherewithal to actively certify compliance with the lead release limits promulgated pursuant to section 413. Notably, S. 391, the Senate version of the Lead Exposure Reduction Act of 1991, contains no similar mention of "certification procedures" in addition to the promulgation of "standards and testing procedures" for lead in ceramic tableware. The Coalition submits that proposed section 301(u) should do no more than prohibit the introduction into commerce of ware that *does not comply* with regulations issued under section 413.

Conclusion

For the foregoing reasons, the Coalition for Safe Ceramicware urges that the following changes be made to section 5 of H.R. 2840:

1. Proposed section 402(g) of the FD&C Act should be eliminated or, in the alternative, modified to read as follows:

> "(g) Effective 24 months after the date of the enactment of this paragraph, if it bears or contains ~~any~~ lead; ~~unless the Secretary has determined, by regulation, that the level of lead borne or contained by the food is safe within the meaning of section 409~~. **in an amount which may render it injurious to health."**

2. Proposed section 413 of the FD&C Act should be amended as follows:

> **"LEAD REGULATIONS FOR WARES**
>
> "SEC. 413. Not later than 12 months after the date of the enactment of the Lead Contamination Control Act Amendments of 1991, the Secretary shall promulgate regulations to establish such standards and testing ~~and certification~~ procedures with respect to lead in ceramicware and crystalware as is necessary to ~~make food that contacts such wares safe within the meaning of section 409~~ **limit the lead content in food contacting such ware to the extent he finds necessary for the protection of public health."**

3. Proposed section 301(u) should be modified to prohibit the introduction into interstate commerce of any ware that is not in compliance with regulations under section 413, as follows:

> "(u) Effective 24 months after the enactment of this subsection, the introduction or delivery for introduction into interstate commerce of any ceramicware or crystalware that ~~has not been certified by the Secretary as~~ **is not** in compliance with regulations under section 413."

The Coalition for Safe Ceramicware appreciates your attention to these comments, and would be happy to discuss with you further any of the changes proposed herein.

Respectfully submitted,

David A. Hartquist

DAVID A. HARTQUIST
Executive Director

STATEMENT OF THE
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON HEALTH AND THE ENVIRONMENT
OF THE
COMMITTEE ON ENERGY AND COMMERCE
U.S. HOUSE OF REPRESENTATIVES

July 26, 1991

The U.S. Environmental Protection Agency (EPA) provides the following statement to the record of the July 26, 1991, hearing before the House Subcommittee on Health and the Environment. It describes EPA's comprehensive strategy to control and reduce human exposure to lead contamination from a number of sources, with special emphasis on programs to address lead contamination from paint, urban soil and dust, and drinking water. Although we have not completed Agency review of new legislative proposals dealing with control of lead in drinking water, we will provide preliminary comments on relevant issues under consideration by the Subcommittee.

EPA's Lead Control Program

Over the last two decades, the Federal government has taken several key actions to reduce risks associated with lead exposures. We have banned the use of lead in house paint and in solder and pipes used in public drinking water systems. We have encouraged the phaseout of lead solder in food cans. And, more important, we have virtually removed lead from gasoline. Finally, our recent drinking water regulation will extend and enhance protection for over 140 million people by reducing lead in their drinking water.

As a result of these actions, there have been dramatic reductions in average blood lead levels over the past 10 to 20 years -- from about 15 ug/dl to about 5 ug/dl. The challenge remaining before us is to find effective solutions to deal with the legacy of contamination from past uses that continue to pose large risks for some people and small but chronic risks to a larger population.

EPA and the other federal agencies have already begun to address the sources of lead contamination. Controlling the remaining sources will neither be easy nor inexpensive. Further, it will require coordination among all EPA programs, across the entire Federal government, and with State and local governments and the private sector to control lead pollution problems in a unified and coherent way. EPA's Office of Pesticides and Toxic Substances (OPTS) is the coordination point for EPA's Lead Strategy, which also includes the Offices of Water, Solid Waste and Emergency Response, Air and Radiation, Enforcement and Research and Development. This group, known as the "Lead Cluster," is charged with ensuring coordination of all EPA's lead-related activities and authorities, and identifying gaps in need of attention. EPA's Lead Strategy calls for effective use of the full range of the Agency's authorities--regulatory and non-regulatory--to meet our goal:

> Reduce lead exposure to the fullest extent practicable, with particular emphasis on reducing the risk to children.

Our goal is ambitious, and the objectives we have established to measure our success will require aggressive and vigilant programs. Our first objective is to significantly reduce the incidence of elevated blood lead levels above 10 ug/dl in children. We estimate that about 15 percent of U.S. children have blood levels above 10 ug/dl, while taking into account the associated costs and benefits. Reaching this objective means targeting high risks; it means finding children with high exposure and reducing those exposures.

Our second objective is broader and equally ambitious--to significantly reduce, through voluntary or regulatory actions, unacceptable lead exposures that are anticipated to pose risks to children, the general population, or the environment. Again, we will need to compare risks to address the largest sources of exposure first. But to meet this objective, EPA will also have to evaluate broad and innovative approaches that target multiple sources and myriad pathways and that do not merely transfer pollution from one medium to another. The U.S. Department of Health and Human Services (HHS) has written, "Lead poisoning remains the most common and societally devastating environmental disease of young children."

Paint, Soil, Drinking Water and Air Pollution

Lead-based paint is the most significant source of lead poisoning to children. The presence of lead paint in a home may present a hazard to a child. Depending on its condition, the risk can increase during a major removal of lead paint, if not done correctly. EPA has developed a program to train lead inspectors, and has provided support for lab accreditation programs for paint testing. The Department of Housing and Urban Development (HUD), with technical support from EPA, has developed guidelines for public housing and is currently developing guidelines for other HUD-associated housing, which includes some private housing. EPA, in conjunction with the Department of Health and Human Services, the Occupational Safety and Health Administration, and HUD, is developing a major public education program aimed at public health officials, housing authorities, general contracting and construction industries, and local government.

A second principal source of lead exposure is soil. Up to 30 percent of exposures producing elevated blood levels in children might come from soil, which is the legacy of many years of using leaded gasoline and paint. The Agency has begun a $15 million study of soil contamination and the effect of its removal on blood lead levels. In addition, EPA intends to establish a joint effort with HUD, the Centers for Disease Control, and the Agency for Toxic Substances Disease Registry to promote blood lead screening and a broad effort to identify the geographic locations, extent and severity of lead-contaminated soils, and the appropriate remedial actions to minimize risk in the short- and long-term.

Another major concern is lead in drinking water. Average exposures from drinking water are smaller than those from lead paint and soil, and fewer children have elevated blood lead levels attributable to this source. On the other hand, virtually everyone is exposed to some lead in drinking water. We estimate the average water contribution to a child's blood level to be about 1 ug/dl, or about 20 percent of total exposure. This contribution will drop significantly as our new lead corrosion control requirements achieve operational changes at water treatment plants, and the consequent reduction in lead in drinking water in homes, schools, and other buildings. We estimate that actions by water suppliers to comply with the new rule will reduce blood lead levels for over half a million children to below 10 ug/dl over the next few years.

EPA is considering using the Toxic Substances Control Act (TSCA) to ban the sale of lead solder, focused on its application in plumbing, combined with a restriction on the amount of lead that can leach from plumbing fixtures, especially those made of brass or bronze. The drinking water regulation, which addresses lead contamination from plumbing that is already installed, combined with these two "prevention-oriented" actions limiting lead leaching from new plumbing components, may significantly reduce drinking water as an exposure source for the general population as well as mitigating some high-risk exposures.

Notably, the reductions in lead in gasoline and in industrial emissions have reduced air lead levels significantly, resulting in reduced loadings to soil and dust which are major exposure pathways for children. Two problems remain for controlling lead in the air. While the number of children exposed in areas near lead smelters and refineries not currently meeting our air standards is small compared to the number of children at risk from paint, soil, and drinking water, these children as a group are at high risk. The number of children in non-attainment areas with blood lead levels greater than 10 ug/dl could probably be cut significantly if the air standards were fully met. Second, EPA will soon propose reduced National Ambient Air Quality Standards for lead. These standards will benefit children in high-lead areas as well as the general population.

The regulation of lead in air is being augmented by a major non-regulatory effort: EPA's Industrial Toxics or "33/50" Project. The "33/50" Project is obtaining commitments from major industrial dischargers for dramatic voluntary reductions in 17 pollutants (including lead) between now and 1995.

Finally, EPA is making full and effective use of its enforcement authorities to curb illegal discharges of lead that contaminate water, air, and land. In a recent action, EPA for the first time coordinated the filing of 22 judicial enforcement actions and took direct administrative enforcement action against 13 facilities through simultaneous use of six environmental statutes: RCRA, CERCLA, CWA, SDWA, CAA and EPCRA. This action exemplifies EPA's efforts to protect human health and the environment through its full range of authorities--from education and pollution prevention to enforcement.

Next Steps

Controlling the remaining sources of lead exposure will not be easy or come cheaply. EPA has accomplished much in the past decade to reduce lead contamination of the environment, and has developed a strategy to accelerate our efforts. HHS has made the elimination of childhood lead poisoning one of its goals for the year 2000. But there is no magic wand that will make this happen--Federal laws and regulations alone will not make this happen. The task of finding lead poisoned children and abating lead in their home environments will largely fall on local public health and housing agencies. Ensuring the existence of well-trained workers to safely abate lead hazards in paint, soil and dust will require cooperation between local and State public health and housing agencies and the private sector. Finely tuning the water treatment that will reduce lead levels in drinking water will require time-consuming and vigilant attention from the 80,000 public water systems in this country. Parents across the U.S. must learn to control dust lead levels in their homes, and that they may need to flush their taps before drinking the water.

Proposed Legislative Changes

The Agency provided an update on its efforts under Lead Contamination Control Act (LCCA) when it testified before the Subcommittee on May 17, 1991. At that time, we proposed a few changes to the Act, one of which is included in the present proposals: to expand EPA's enforcement authority for violations of the lead solder ban. We continue to support such an authority.

The majority of the legislative proposals on drinking water appear to be related to EPA's new rule dealing with lead in drinking water. The legislative proposals suggest changes in some areas to the recently promulgated lead rule. As a matter of general policy, we oppose a provision which incorporates a complex rule like this one into the law. In order to ensure that Federal regulations reflect the latest scientific and technical expertise, and respond to information, institutional variables and public comments, they need regular review and adjustment. An entire body of law (the Administrative Procedure Act) controls the development of Federal regulations, and ensures a vigorous public debate with full public notice and opportunity for comment. We strongly feel these are activities best left to the Executive Branch.

Our preliminary review of these proposed changes indicates that virtually all represent options that we considered during the lengthy rulemaking process, but eventually rejected. It is of note that EPA received and reviewed over 3,000 public comments on the proposed rule. The Subcommittee is welcome to consider the extraordinary public record amassed during this rulemaking, and if it did so, would likely conclude that EPA has been faithful to its statutory mandate and responsive to the comments of all interested parties. We believe the final rule successfully takes into account the myriad of scientific, technical, and institutional complexities involved in addressing the problem of lead in drinking water, and also achieves health benefits equal to, or greater than any of the current legislative proposals of which we are aware.

We estimate some of the proposed legislative changes would impose substantial additional costs on the public with a negligible increase in public health protection. The attached table displays our preliminary analysis of the impacts of one of the major legislative proposals.

609

Social Cost Implications of HR 2840

Impact ($ Million/Yr)		Base Impacts (EPA Rule)	Increment (HR 2840)
Cost			
Monitoring		$ 40	+ $ 30
Corrosion Control		220	+ 550
Source Water Treatment		90	0
Public Education		30	+ 70
Lead Service Line		370	+ 1,800
	Total	$ 750 Million	+ $2,450 Million
Benefits			
Corrosion Control		$ 4,300	+ $ 200
Lead Service Line Replacement		240	+ 160
	Total	$ 4,540 Million	+ $ 360 Million
	Net Benefit	$ 3,790 Million	(-$ 2,090 Million)
Children brought to below 10 ug/dl		570,000 Million	+ 0

Note: Increase in costs reflect extension of requirements to the 120,000 transient non-community water systems and complete replacement of all lead service lines, both of which are the logical outcomes of HR 2840. There is no increase in the number of children brought to below the 10 ug/dl blood lead level as a result of HR 2840 because the EPA rule already addresses the high exposure sites. Fixing those sites would result in the largest blood level reductions. Any further reduction would be very small, and would not significantly affect the remaining children (whose blood lead levels are due to other sources of lead contamination).

To assist your immediate task of considering these proposals, we have preliminary comments on six specific elements, each of which were considered during rule development.

MCL in the Distribution System

We considered, but ultimately rejected, the option of establishing an MCL in source water or in the distribution system because the evidence indicated the final rule's approach of establishing a treatment technique covering both corrosion control and source water treatment would provide equivalent public health protection without the confusion that would be caused by promulgating multiple lead levels (i.e., action level at the tap and MCL for source water). Moreover, MCLs measured anywhere in the system except at the tap do not reflect actual human exposures or the need for additional treatment. Instead, our rule requires monitoring at the tap in worst case situations to ensure detection and appropriate levels of treatment. We received extensive comment on this issue which supported our final decision.

Reducing the Action Level

We also considered, but ultimately rejected, a lower action level for several reasons: available engineering data indicate that such a level is not achievable in many--perhaps most--systems; every system in the nation is expected to exceed the legislatively proposed level of 10 ppb at least once--even systems with no lead service lines that have optimized corrosion control. A lower action level will not necessarily result in more effective corrosion control, and therefore will not automatically lead to lower lead levels. Further, EPA's action level of 15 ppb already captures cases of high lead contamination.

Public Review and Comment on State Decisions

Under EPA's rule, States are required to make numerous complex scientific and technical determinations regarding corrosion control, and treatment installation and operation. The new legislative proposals would require States to solicit public comment on each and every treatment determination, which is costly and administratively burdensome. EPA's rule already requires immediate public notification if elevated lead levels are found, including a description of the risks and responsibilities of the water system, and the schedules for reducing levels. In addition, many State agencies have existing State administrative procedures that provide for public notice and comment. EPA estimates that adding over 1 Million public reviews on detailed, technical determinations by the States will cause excessive delays in implementation and may exceed the fiscal capacity of already overburdened States.

EPA Review of State Decisions

In order for EPA to oversee State actions and to ensure the adequacy of State decisions, EPA's rule establishes a long list of reports States must make to EPA. In addition, States are required to retain complete records of all decisions, including supporting documentation and explanations of the technical basis for each decision they make. During our annual on-site audits of State programs, we will examine a sample of case files for adequacy and completeness. We believe that this planned oversight will provide EPA with sufficient information to determine whether the State is fully and effectively discharging its responsibilities. The proposed system-by-system EPA reviews are unimplementable, unnecessary and divert EPA resources from providing much needed technical assistance.

Regulation of Transient Non-Community Water Systems

This proposed legislative requirement would add over 120,000 water systems to the existing regulatory workload of about 80,000 systems. Moreover, we estimate that the risk of exposures at these sites is minimal, although the implementation costs to the water systems would be comparatively high. Again, EPA believes that the enormous new workload on States will divert scarce resources from timely and effective implementation of controls in other public water systems, which will provide less health protection for everyone.

Shortening Schedules

The legislative proposals mandate significantly shorter schedules for implementation of corrosion control and service line replacement. During the rulemaking, we carefully examined the ability of the water supply industry to make the required changes, and ultimately settled on a schedule that our findings indicate is reasonable. In order to install and optimize corrosion control, systems need adequate time to plan, design, construct, and stabilize a variety of treatment measures that involve complex interaction with other water treatment processes. Under our rule, States must require systems to replace service lines on the shortest feasible schedule. We received many comments on this issue, and we were convinced that sound science and engineering requires the schedule we ultimately promulgated in our final rule.

Analytical Methods and MCLs

One of the legislative proposals before you involves the Practical Quantitation Level (PQL). Consistent with views expressed earlier, the Agency believes it must have discretion in how it establishes MCLs and treatment requirements, and that codification proposals, such as this, limit the Agency's ability to protect human health and the environment.

Restrictions on the Sale of Lead Solder

We agree that the improper use of lead solder can be a significant source of lead exposure in specific cases and we are pursuing this issue. In our efforts to restrict the sale and/or use of lead solder using authorities under the Toxic Substances Control Act (TSCA), we have looked at provisions similar to those in the bill. We feel that targeting wholesalers and retailers may not be our best option, since heating and air conditioning repairmen who work with metal ductwork also need to use lead solder. EPA is currently investigating alternate methods of controlling lead plumbing solder under TSCA.

Lead-based Paint

The Agency supports the goals of the proposed legislation to reduce exposures to sources of environmentally-dispersed lead, particularly exposures of small children to lead-based paint sources. In fact, many of the inspection and abatement technology development, accreditation and other activities mandated by the legislation and targeted for HHS are already underway by EPA, HHS or HUD staff, as you will see.

However, before we require certain lead-based paint inspection, abatement and disclosure activities, we must ensure that the present capacity of the lead abatement infrastructure is sufficient to respond reliably and effectively. Unfortunately, certain mandatory actions could lead to uncontrolled or improper lead-based paint abatement, which could increase, rather than reduce, risk.

We must be careful not to overstimulate lead abatement activity until current scientific investigations into the methodologies for best detecting and abating lead-based paint have produced reliable and widely available technology. Additionally, we need to proceed cautiously until a sufficiently trained national infrastructure of control and abatement personnel are available to do the job right.

Lead Inspection and Abatement Training and Licensing

Although the implementation of lead accreditation programs must take place at the state level, the Federal government (EPA, HUD and HHS) should act, and is now acting, as a stimulus for these activities. Clearly, the quality instruction of abatement professionals is critical to establishing a sound system of training for lead abatement activity.

EPA, in conjunction with HUD and other agencies, has already begun to develop model inspector and abatement supervisor training courses through two leading universities. EPA has also already taken the lead in establishing standardized licensing procedures for lead inspectors and abatement workers, as the initial step to promoting national accreditation through the states.

The bill also directs HHS to establish a program to certify laboratories to test substances for lead content. EPA has already begun initiating an accreditation program for laboratories that conduct environmental sample analyses.

Lead Inspections and Lead Abatement

Over the past several years EPA has been working very closely with HUD, NIST, OSHA and others in the area of lead-based paint inspection and abatement technology. EPA believes that evaluating and improving new technologies in this area is critical to an effective program. Research into these areas is one of the highest priorities in the Agency's Lead Strategy.

The bill requires that HHS, in consultation with other Federal agencies, prepare a report on the methods and devices available to inspect for lead paint and other lead hazards, in addition to methods used to abate lead hazards. EPA, HUD, CPSC and various state agencies are already conducting a great deal of research and demonstration work in this area. For example, EPA is working on an evaluation of test kits for lead, we are working with other agencies to improve the technology used in lead testing and we are evaluating encapsulants used for lead paint abatement.

EPA, along with HUD and other agencies, has undertaken steps to develop standardized procedures for identifying and abating lead. In 1990 HUD, in consultation with EPA and OSHA, published Lead-Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing. Both agencies are already working to revise these guidelines to incorporate changes in technology and information gained through recent research efforts. EPA is committed to aggressively moving ahead to further develop these procedures for lead inspections and abatements.

EPA agrees that the public needs to have information about the adequacy of the devices and products used for lead abatement and inspection. We believe, however, that product-by-product evaluations are best performed by the private sector. EPA, in consultation with other agencies, should be responsible for developing evaluation protocols and, in fact, the Agency is now developing them in the area of encapsulants used for abatement.

Disclosure of Indoor Lead Hazards

While clearly valuable in principle, we fear that a national mandatory requirement now to produce a lead disclosure statement by all persons wishing to sell, lease or renovate housing may bring more problems than solutions. First, as mentioned above, disclosure may overwhelm the present capacity of the lead abatement infrastructure to effectively respond. Although the bill does not require abatement, a requirement such as this may lead to uncontrolled or improper abatements, which could increase through contamination by lead dust, rather than reduce, risk to occupants. HUD, EPA and HHS are now taking steps to improve identification and abatement technology and to help establish accreditation which will be critical to any disclosure program.

Second, there is a need to balance any potential hazards which may exist in homes with the need of low-income families to find housing. For example, landlords, unable to conduct immediate testing and determine the presence of lead-based paint in their buildings, may be reluctant to rent to families with small children for liability and other reasons. Consequently, families seeking low-income housing may encounter difficulties in finding accommodations. A few states, including Massachusetts, have established lead disclosure laws. State-by-state consideration and voluntary programs which include information on when and how best to abate lead paint may be the best approach.

Public Education Program

EPA strongly supports the need for an intensive educational effort. The development and dissemination of public information materials is one of our highest priorities. Additionally, the Federal Interagency Lead Taskforce, co-chaired by EPA and HUD, is actively involved in this effort. EPA, HUD, HHS and other agencies are currently developing a centralized clearinghouse and hotline to assure coordinated dissemination of information to the public. In addition, the agencies are working together to collect and evaluate existing educational materials. This effort will help the Federal government prioritize the development of new materials and make sure that accurate and clear information is available to a wide audience.

EPA is also currently developing a general information brochure for parents and homeowners to advise them on lead in the residential environment. We feel that it is critical that individuals understand lead hazards and that an accurate perspective is provided on risk.

Finally, EPA is creating a network of university-based training centers. In addition to training, the centers system will be used as a mechanism to disseminate current developments in inspection and abatement technology to the contractor community.

Schools and Day Care Centers

EPA agrees that day care facilities and kindergartens are primary targets for voluntary lead-based paint identification and abatement activities, and should take a priority over any other schools. Our children under seven are the most vulnerable, since their natural behavior (crawling on floors, frequent hand-to-mouth activity) promotes increased exposure to lead-based paint dust, a primary source of concern for children.

Again, however, the present limits of our technology and available control and abatement personnel must be considered when mandating any inspection and abatement actions. Improper abatement in schools could create increased exposure problems. Further, the benefits of lead-based paint controls to older school-aged children, however, will not be as significant. Targeting elementary or other higher-level schools, for example, will place a substantial technical and financial burden on these schools with less risk reduction.

Conclusion

In conclusion, EPA reiterates its strong commitment to protecting human health by reducing exposure to lead in water, air, and soil. As a nation, we must work together to eventually eliminate the health impacts of lead contamination, and this Agency is dedicated to executing its responsibilities to achieve this goal. However, while we endorse the goal of reducing lead exposures, we oppose H.R. 2840 because it is largely an ineffective, costly, and possibly counterproductive approach to addressing the lead problem.

EPA is willing to answer questions concerning any scientific, technical and implementation issues related to reducing the risk of lead to human health and the environment.

INTERNATIONAL CRYSTAL FEDERATION
3050 K STREET, N.W.
SUITE 400
WASHINGTON, D.C. 20007
(202) 342-8450

DAVID A. HARTQUIST
EXECUTIVE DIRECTOR

(202) 342-8450

August 16, 1991

The Honorable Henry A. Waxman
Chairman, Subcommittee on Health and the
Environment, Committee on Energy and Commerce
U.S. House of Representatives
House Annex I, Room 512
Washington, D.C. 20515

Re: H.R. 2840

Dear Chairman Waxman:

The International Crystal Federation ("ICF"), an *ad hoc* association of the world's leading producers of lead crystal products, wishes to comment on section 5 of H.R. 2840, the Lead Contamination Control Act Amendments of 1991.

Section 5 of H.R. 2840 would, among other things, amend the Federal Food, Drug and Cosmetic Act ("FD&C Act") by adding a new section 413 to that Act reading as follows:

> **"LEAD REGULATIONS FOR WARES**
>
> "SEC. 413. Not later than 12 months after the date of the enactment of the Lead Contamination Control Act Amendments of 1991, the Secretary [of Health and Human Services] shall promulgate regulations to establish such standards and testing and certification procedures with respect to lead in ceramic ware and crystal ware as is necessary to

> make food that contacts such ware safe within the meaning of section 409."

Section 5 of the bill further amends section 301 of the FD&C Act by adding to the list of "prohibited acts" under the Act "the introduction or delivery for introduction into interstate commerce of any ceramic ware or crystal ware that has not been certified by the Secretary as in compliance with regulations under section 413," beginning 24 months after the date of enactment of the bill.

These provisions go to the heart of the *raison d'être* of the ICF. The ICF was recently organized in response to preliminary scientific findings published earlier this year that suggest that lead crystal decanters may elute lead into alcoholic beverages during long periods of storage. FDA reacted swiftly to these published findings by announcing that it intended to determine whether a federal release limit for leachable lead in crystal is warranted. The ICF was organized immediately thereafter as a means of combining industry resources to provide FDA with the data that will be needed to resolve this question.

With this as background, and assuming *arguendo* that FDA concludes that a regulatory standard for leachable lead in crystal is necessary, the ICF wishes to make four points about the amendments to the FD&C Act contained in section 5 of H.R. 2840.

First, there appears to be no need for proposed section 402(g) of the FD&C Act. Under that proposed amendment, "[a] food shall be deemed to be adulterated . . . [e]ffective 24 months after the date of the enactment of this paragraph, if it bears or contains any lead, unless the Secretary has determined, by regulation, that the level of lead borne or contained by the food is safe within the meaning of section 409." Given that *some* lead is present in *most* foods because of its presence throughout the environment, this statutory provision would saddle FDA with the impossible task of issuing regulatory tolerances for lead in virtually every food product. Section 402(a)(1) of the Act already provides, however, that "[a] food shall be deemed to be adulterated . . . if it bears or contains any poisonous or deleterious substance which may render it injurious to health." The ICF submits that this existing statutory provision provides FDA with sufficient authority to take action against foods that have been contaminated with lead in amounts that are unsafe. Section 402(g) is therefore surplusage, and should be deleted.

Second, it is not at all clear what type of "certification procedures" the Secretary is to establish with respect to lead in ceramic tableware and crystal under the newly proposed section 413 of the FD&C Act. Notably, S. 391, the Senate version of the Lead Exposure Reduction Act of 1991, contains no similar call for "certification procedures," but is otherwise similar to H.R. 2840 in calling for the promulgation of "standards and testing procedures" for lead in ceramic tableware and crystal. Simply stated, the enforcement resources of FDA are already stretched much too thin for the agency to undertake to actively certify compliance with the lead release limits promulgated pursuant to section 413. There is certainly no compelling reason for imposing a certification regime upon the agency in the case of ceramic tableware and crystal. The ICF submits that S. 391 goes far enough in simply requiring the Secretary to promulgate such "standards and testing procedures" with respect to lead in ceramic tableware and crystal as are necessary to protect public health.

Third, the requirement that FDA issue its regulations within 12 months after the date of the enactment of the bill is clearly too ambitious a schedule as applied to crystal. In the case of ceramic tableware, FDA has had release limits in effect (in the form of "action levels") for 20 years. Moreover, the agency has already issued a proposed rule modifying the existing release limit applicable to ceramic food service pitchers, and has already received extensive lead release data regarding other tableware products. Issuance of final regulations establishing "standards and testing procedures" with respect to ceramic tableware within 12 months of the effective date of the bill should, therefore, be manageable.

In the case of crystal, on the other hand, FDA is largely "starting from scratch" in its recently launched effort to assess the need for a release limit for leachable lead in crystal. While there is an international standard (ISO 7086) governing lead release from crystal, there is currently no federal release limit applicable to crystal products. It is simply unrealistic to expect the agency to be able to amass the data needed to "fill the regulatory vacuum" on the same schedule as applies to ceramic tableware. The ICF respectfully suggests that the timeframe for issuance of regulations establishing "standards and testing procedures" with respect to lead in crystal under the proposed section 413 of the FD&C Act should be at least 24 months after the date of the bill's enactment. For similar reasons, the prohibition against selling crystal products that fail to comply with the FDA standard should take effect 12 months thereafter, or 36 months following enactment of the bill.

Finally, the ICF wishes to register its objection to the specific safety standard employed in proposed section 413 -- that is, the requirement that the regulations "establish such standards and testing . . . procedures with respect to lead in ceramic ware and crystal ware *as is necessary to make food that contacts such ware safe within the meaning of section 409* [of the FD&C Act]." The ICF submits that this reference to the safety standard employed in section 409 is inconsistent with the original congressional intent behind the FD&C Act. The more appropriate standard for judging the adequacy of any lead release limits for lead in crystal is the "necessary for the protection of public health" standard used in *section 406* of the FD&C Act.

Section 402 of the FD&C Act reads, in pertinent part, as follows:

> A food shall be deemed to be adulterated --
>
> * * * * * *
>
> (2)(A) if it bears or contains any added poisonous or added deleterious substance (other than one which is . . . a food additive . . .) which is unsafe within the meaning of section [406] of this title, or
>
> * * * * * *
>
> (C) if it is, or it bears or contains, any food additive which is unsafe within the meaning of section [409].

21 U.S.C. § 342 (1990). Section 406 of the FD&C Act permits FDA to establish tolerances for added poisonous or deleterious substances in food, with those limits to be set at levels "necessary for the protection of public health." *Id.* § 346. Section 409 of the Act, by contrast, permits the establishment of tolerances for "food additives" if such additives "may be safely used." *Id.* § 348. There must be a "reasonable certainty of no harm." The safety of a "food additive" must be established via a petition before the FDA may issue a regulation prescribing conditions under which the additive may be safely used.

Lead is not the type of substance appropriately regulated under section 409, which was enacted to give FDA the authority to approve the use of *safe*, intentionally-added food additives. FDA recognized this back in 1974:

> When the Food Additives Amendment of 1958 [which added section 409] was enacted, the provisions of section 406 of the act were not repealed. Although all added poisonous or deleterious ingredients are food additives, except when they appear in food accidentally and unforeseeably or are exempted under section 201(s) of the act because they are otherwise regulated under the act, the tolerance-setting provisions of section 406 of the act were left intact to deal with those unavoidably added poisonous or deleterious ingredients that could not meet the high standards for issuance of a regulation under the authority of section 409 of the act. A number of added poisonous or deleterious substances, which are also food additives within the meaning of section 201(s) of the act, are unavoidable but cannot meet the requirements for a section 409 regulation because their

> safety cannot be demonstrated and because they serve no functional purpose. *A prominent example is lead, which was one of the contaminants most frequently mentioned in the legislative history of the 1938 act and one of the prime contaminants with which section 406 was enacted to deal. Lead cannot be the subject of a food additive regulation under section 409 of the act even at trivial levels because it serves no functional purpose. Section 406 of the act, therefore, remains in force to control the use of such substances, since there would otherwise be no statutory means available to recognize their unavoidability and to exercise reasonable control over their presence.*

Poisonous or Deleterious Substances in Food, 39 Fed. Reg. 42,743, 42,744-45 (December 6, 1974) (notice of proposed rulemaking) (emphasis added).

The ICF submits that this reasoning continues to hold force today. While lead may be "added" to food to the extent that it migrates from a food contact article and becomes a component of food, it is not the type of food additive which section 409 was intended to cover. Accordingly, proposed section 413 of the FD&C Act should not reference the standard of safety employed in section 409, but should instead utilize the standard of safety found in section 406 of the Act -- that is, the lead release limits should be sufficient to limit the lead content in food contacting crystalware "to the extent [the Secretary] finds necessary for the protection of public health." The ICF recommends that section 413 adopt the relevant language of section 406 without explicitly cross-referencing that section in order to negate the inference that FDA must utilize the specific procedures of section 406 (including formal rulemaking procedures) in issuing regulations to limit lead release from crystal products.

The International Crystal Federation appreciates your attention to these comments. A suggested revision of section 5 of the bill, based on the points raised herein, is attached.

Very truly yours,

David A. Hartquist
DAVID A. HARTQUIST
Executive Director

DAH:mdl
Enclosure

PROPOSED CHANGES TO SECTION 5
OF H.R. 2840

SEC. 5. LEAD CONTAMINATION IN FOOD.

The Federal Food, Drug & Cosmetic Act is amended as follows:

(1) At the end of section 402 (21 U.S.C. 342) add the following:

"(f) Effective 12 months after the date of the enactment of this paragraph, if it is packaged in a can or other container that contains solder or flux with any lead content.

~~"(g) Effective 24 months after the date of the enactment of this paragraph, if it bears or contains any lead, unless the Secretary has determined, by regulation, that the level of lead borne or contained by the food is safe within the meaning of section 409.".~~

(2)(A) Chapter IV (21 U.S.C. 341 et seq.) is amended by adding at the end the following:

"LEAD REGULATIONS FOR WARES

"SEC. 413. **(a)** Not later than 12 months after the date of the enactment of the Lead Contamination Control Act Amendments of 1991, the Secretary shall promulgate regulations to establish such standards and testing ~~and certification~~ procedures with respect to lead in ceramic ware ~~and crystal ware~~ as is **are** necessary to ~~make food that contacts such ware safe within the meaning of section 409~~ **limit the lead content in food contacting such ware to the extent necessary for the protection of public health."**

(b) Not later than 24 months after the date of the enactment of the Lead Contamination Control Act Amendments of 1991, the Secretary shall promulgate regulations to establish such standards and testing procedures with respect to lead in crystal ware as are necessary to limit the lead content in food contacting such ware to the extent necessary for the protection of public health."

(B) Section 301 (21 U.S.C. 331) is amended by adding at the end the following:

"(u) Effective 24 months after the enactment of this subsection, the introduction or delivery for introduction into interstate commerce of any ceramic ware ~~or crystal ware~~ that ~~has not been certified by the Secretary as~~ **is not** in compliance with regulations under section 413.

"(v) **Effective 36 months after the enactment of this subsection, the introduction or delivery for introduction into interstate commerce of any crystal ware that is not in compliance with regulations under section 413.**

John B. Moran

Director, Occupational Safety and Health

Laborers' Health and Safety Fund of North America

The recent HUD Report to congress, Comprehensive and Workable Plan for the Abatement of Lead-Based Paint in Privately Owned Housing, estimates that 57 million privately owned and occupied homes contain lead-based paint of which an estimated 9.9 million are occupied by families with children under the age of 7. The Report discusses the relationship between lead-based paint, indoor lead levels in dust, and childhood blood-lead levels. The Report also reviews the pending recommendations from the Centers of Disease control (CDC) with regard to childhood blood-lead levels which constitute a health risk, levels which are significantly lower than previous CDC recommendations.

The Report further reviews the relationship between lead-based paint abatement and subsequent indoor lead dust levels. While substantial research has not been done in this area, the general view is that lead levels in settled dust in homes after lead-based paint abatement depends to a great degree on the methods used in the abatement activity, worker training and subsequent clean-up. An excellent example, not reviewed in the HUD Report, is the recently published research by Frafel, et al. (American Journal of Public health, Oct. 1990). That study indicates that lead levels in dust increased 10 to 100 times over the pre-abatement levels in homes after lead-based paint had been abated using traditional methods. Evaluation of lead in dust levels six months after abatement methods evidenced some improvement but were not as efficacious as required. Improved abatement methods, enhanced worker protection measures, enhanced occupant and furnishings protective measures, improved disposal methods, and worker training were all recommended as needed measures to assure the safety of occupants.

It is evident that lead-based paint in occupied housing presents a clear and increasingly significant risk to the public, especially to our nation's children. It is further evident that the abatement of this hazard is neither simple nor straightforward. In fact, improper abatement may lead to increased risk to occupants of abated housing units. The magnitude of the problem is enormous and has a potentially adverse health impact on a large percentage of the current young generation and the next generation as well. The negative consequences of improper abatement of lead-based paint simply cannot be ignored. The health risks to children can be life long.

Like the occupants of housing units where lead-based paint is abated, the workers who perform the abatement activity are at risk of excessive exposure to lead. OSHA promulgated comprehensive lead regulations for general industry in 1978 in order to address the worker health effects from lead exposures. Recent reports evidence significant non-compliance with these standards (American Journal Industrial Medicine, Vol. 18, No. 1, 1990). Further, those workers employed in the construction industry sector are not covered by the comprehensive general industry OSHA standard. Increasing evidence from the few states, currently 16, which require reporting of elevated blood-lead levels demonstrates that construction workers are often severely over-exposed and suffer highly elevated levels of lead in blood. The construction industry will be the primary industry engaged in lead paint abatement. Yet, the construction industry is the least experienced in recognizing and preventing the hazards of lead. Furthermore, the construction industry is the least experienced high hazard industry in the country when it comes to occupational health recognition and prevention programs.

Lead-based paint abatement is complicated with regard to the implementation of methods to reduce or eliminate the hazard without increasing risks to workers, children, and the public. Federal HUD, EPA, OSHA, and DOT are directly involved in the regulation of specific lead abatement activities. This complex array of regulatory agency activities is not without precedent. Asbestos abatement is a similar case and one of which is of significant lesser magnitude than lead since it involves less than 1 million commercial, public, and school buildings. OSHA regulates asbestos exposures to workers engaged in activities within the scope of the OSHA preview. EPA regulates public schools and applies the OSHA asbestos standards to public employees in those states which are not covered by OSHA regulations. EPA also establishes minimum training requirements for those engaged in asbestos abatement including a training provider approval program, and regulates disposal of asbestos abatement debris. DOT regulates the transportation of asbestos waste. HUD has issued major guidelines addressing the issue of lead paint abatement in Public and Indian housing (55 FR 14556) including a revised worker protection chapter (55 FR 39873) due to the deficiencies in the original version largely associated with the huge disparity between OSHA's standards covering general industry workers and construction workers.

The interagency coordination between the regulatory activities of these agencies has not only created a tangled bureaucratic nightmare for the regulated communities, it has also left major gaps where workers and the public are exposed as a consequence of asbestos abatement activities which are not clearly addressed. Examples include asbestos identification in commercial buildings and the lack of accredited training requirements for workers covered by the OSHA standards. The important issue is, however, that no one agency is accountable for the program. Because the lead-based paint abatement issue is more complex, vastly greater in magnitude than asbestos, and directly impacts millions of children and tens of millions homes such a confusing array of regulatory jurisdictions and lack of a single accountable federal agency is detrimental to both worker and public health.

CONCLUSIONS:

Basic conclusions relevant to the lead-based paint abatement issue based upon the current situation are as follows:

1. **Lead-based** paint in housing represents a know source of risk, especially to millions of children.

2. **Huge numbers,** some 57 million, of homes contain **lead-based** paint.

3. **Lead-based** paint can be removed from houses or other methods can be utilized to largely eliminate the risks to occupants from this hazard.

4. Failure to respond to the lead-based paint problem in housing will result in the continued exposure of the public, especially children, to this hazard.

5. Tightened recommendations by CDC with regard to blood-lead levels in children which constitute a health threat will increase the scope and magnitude of this problem while heightening public concern.

6. Improved abatement methods including worker training in these methods is necessary if abatement is to be effective in reducing occupant exposure to lead. Current methods have been demonstrated to be inadequate and indeed may increase the health risk to workers and occupants as a consequence of increased exposure to lead.

7. Current OSHA comprehensive regulations do not apply to construction workers which will be the primary labor force conducting lead paint abatement.

8. Current HUD guidelines only recommend comprehensive worker protection measures due to the absence of such OSHA regulations.

9. No federal training requirements or training program criteria for lead abatement activities currently exist.

10. Several federal agencies are currently involved in various aspects of lead control activities. No federal agency is evidencing a lead role in coordinating this complex undertaking.

11. Work in response to this emerging issue has already begun. The potential for aggravation of the childhood lead poisoning problem as a consequence of improper abatement methods is

highly probable. This problem will continue to escalate in the absence of comprehensive federal control.

H.R. 2840

H.R. 2840 proposes to amend the Public Health Services Act to "reduce human exposure to lead in residences, schools for young children and day care centers, including exposure to lead in drinking water, and for other purposes." H.R. 2840 contains five (5) sections, of which one Section (4) focuses upon Indoor lead contamination which is the section which is the principal focus of this analysis. Section (4) specifically targets "covered residential premises..., school(s), or day care center(s)", which essentially are such facilities constructed before 1980.

Subtitle A to Section (4) addresses:

- Lead inspection and abatement training and licensing (Sec. 2801) through programs established within 2 years of enactment by the Secretary, HHS.

- Lead inspection, lead disclosure statements, and lead abatement (Sec. 2802) based upon standards promolgated within 2 years by the Secretary, HHS.

- Disclosure of indoor lead hazards (Sec. 2803) based upon regulations promolgate within 2 years by the Secretary, HHS.

- A public education program (Sec. 2804) undertaken by the Secretary HHS.

- Inspections for lead contaminations in schools and day care enters (Sec. 2821) and response actions based upon the results thereof based upon rules promolgated by the Secretary, HHS within 2 years of enactment.

Section (4) provisions require that lead inspections be conducted by licensed lead inspections per Sec. 2801. The Section does not require deleading to be conducted by trained deleaders.

H.R. 2840 focus upon an important lead exposure potential environment with specific regard to those at high risk: children. This focus is needed, is appropriate, and is central to the longer term prevention of childhood lead poisoning. However, H.R. 2840 fails to address the related critical issues essential to achieving that objective in that:

- Worker protection standards are not appropriately required.

As there are no comprehensive OSHA standards applicable to lead in construction, which encompasses lead paint abatement, this critical element in assuring that abated facilities eliminate the lead hazard rather than worsening it must be appropriately addressed if the intent of H.R. 2840 is to be achieved. Sec. 2802(c) does require the Secretary of HHS to promolgate standards for lead abatement in covered premises to include protection of residents and workers within 2 years although no basis for such standards or requirements for interim standards based upon currently available criteria is specified. The DHHS has no experience in worker protection regulations or there enforcement. Further, Sec. 2833 Enforcement include "regulations, order, accreditations, certifications, or license's" not "standards" as specified in Sec. 2802 (c) thus abatement standards may not be enforceable.

- Lead inspector and deleader training requirements are inadequate.

It is essential that training programs required for inspectors and deleaders (Sec. 2801) be required to meet minimum curriculum requirements based upon inspection and abatement standards. DHHS has no experience with programs of this type or magnitude. Further, experience with similar approaches involving asbestos abatement have demonstrated the clear need to establish minimum training provider and training curriculum requirements. In addition, a program to accredit individual instructors rather than training providers is a resource intensive undertaking which would also present an immense quality control problem. These are critical matters, as the protection of worker and public health has been demonstrated to be directly linked to the adequacy of worker, supervisor, and contractor training programs and related training providers accreditation which assure achievement of minimum levels of competency and proficiency which are likewise not required by the Bill. Absent language in H.R. 2840 establishing the importance of such and vesting responsibility for such within an agency which has had relevant experience assures that the objectives of public health protection within H.R. 2840 will not be achieved in a timely fashion. Worse, the public health problem may be exacerbated.

- Licensed deleaders are not adequately defined nor are such required on lead abatement activities.

Experience has shown that the training requirements and competency/proficiency requirements for abatement workers, supervisors, and contractors are different. Workers, for example, do not need to be expert at collection, chain-of-custody labeling, assured analysis at a certified laboratory, and preparation of reports documenting satisfactory lead abatement performance. Supervisors and contractors must be so. This differing dimension of activities and responsibilities is not recognized in Section (4) yet such is essential to an effective training activity and subsequent conduct of appropriate deleading activities.

Sec. 2802(e) Prohibitions does not require that deleading of the covered facilities be conducted by licensed deleaders as the conduct of such by unlicensed deleaders (which includes contractors, presumably) is not prohibited.

Potentially, the definition of deleaders, "perform(s) lead abatement work", covers only lead abatement workers. If such is the intent of H.R. 2840, it would be a grave mistake as those controlling such workers, supervisors and contractors, would not be included and they are critical to an effective deleading actively.

- A program to implement training is not included.

The lead abatement problem is enormous and the potential to adversely impact large number of workers, children, and other occupants of improperly abated premises is very real. H.R. 2840 makes no provisions for grant programs, for example, to assure the timely availability of a cadre of trained personnel and trainers to meet the requirements of the Bill.

- The narrow scope of Section (4) is inappropriate.

Lead based paint in residences, schools for young children, and day care centers does indeed represent a real and significant threat to the Nation's young persons. The training and licensure and lead abatement standards required by H.R.2840 are not, however, unique to lead paint problems in only these environs. Lead in a wide range of settings including our national highway bridge infrastructure and commercial and public buildings as examples. Training and licensure of "inspectors" and "deleaders" and lead abatement standards are appropriate for all activities associated with lead paint abatement. H.R. 2840 simply fails to recognize the broader scope, importance, and implications of this. What is not needed for our Nation to address this major problem is training, licensure, and abatement standards different and unique to each environment where lead based paint exists.

RECOMMENDATIONS:

Because the magnitude of the potential public health threat is large and increasing and several legislative and federal agency mandates must be utilized to manage the lead paint abatement crisis, it is recommended that he following be considered:

1. A single lead federal agency, EPA, be assigned responsibility and accountability for the lead paint abatement program.

2. Within a defined period after enactment of lead paint abatement legislation, 6 months, issuance of comprehensive interim regulations in the following categories be required legislatively:

   - Worker protection
   - Public protection
   - Environmental protection
   - Training standards, criteria, certification, accreditation.

   Such worker protection interim standards to be based upon the revised Chapter 8 to the HUD Guidelines (55 FR 39873).

3. Within a specified time period, promulgation of final

regulations based upon those listed in 2 above.

4. The lead agency charged with establishing an interagency coordinating committee which will function in an advisory capacity to the EPA Administrator on the regulatory program interactions as well as coordination, enforcement and research.

5. The National Institute of Occupational Safety and Health be charged with the responsibility of developing an Occupational Health Hazard Evaluation focused on lead paint abatement and that be provided to the EPA Administrator within 9 months of enactment.

6. the National Institute of Environmental Health Science to perform an Environmental Health Hazard Evaluation.

7. EPA to be responsible for annual reports to Congress on the progress in implementing the program.

8. EPA to establish a National Advisory Committee to serve as advisors and consultants to the Administrator for the lead abatement program.

We have developed recommended legislative language which incorporates the above recommendations which is hereto attached.

LEAD ABATEMENT REGULATION
ENFORCEMENT & RESEARCH & TRAINING

SECTION I. REGULATIONS

a. **Promulgation:** The Administrator of the Environmental Protection Agency ("EPA"), shall, within one year from the date of enactment, promulgate final regulations governing lead abatement activities.

b. **Final Regulations:** Final regulations promulgated under Section I(a) shall:

i) include such requirements which may be appropriate in revising the Interim Regulations required under Section I c which may include any revisions to the Department of Housing and Urban Development Guidelines which serve as the basis for the Interim Regulations, final or proposed worker protection standards issued by the Occupational Safety and Health Administration governing exposures to lead, and worker or public protection standards which may be issued by other Federal or State agencies.

ii) include specific requirements for the accreditation of lead abatement training programs for lead abatement workers, supervisors, contractors, inspectors, and planners to include:

(a) minimum requirements for the accreditation of training providers.

(b) minimum training curriculum requirements.

(c) minimum training hour requirements.

(d) minimum hands-on training requirements.

(e) minimum trainee competency and proficiency requirements.

(f) minimum requirements for training program quality control.

(g) procedures for approving accreditation programs by the States.

iii) include specific requirements for the training of lead abatement workers, supervisors, contractors, inspectors, and planners to include at a minimum:

(a) health effects of lead and sources of exposures.

(b) workers protection practices and procedures.

(c) abatement methods.

(d) prohibited abatement methods and practices.

(e) clean-up and clearance procedures.

(f) disposal requirements.

(g) testing and monitoring.

(h) medical monitoring.

(i) encapsulation and maintenance practices.

(j) EPA regulatory requirements.

(k) recordkeeping.

(l) worker rights and responsibilities.

(m) insurance and bonding requirements.

iv) include specific requirements for the certification of lead abatement contractors.

c. **Interim Regulations**: Within 6 months of enactment, the Administrator of the Environmental Protection Agency shall issue interim regulations governing lead abatement activities that are at least as comprehensive in scope and specificity as the guidelines issued by the Department of Housing and Urban Development published at Federal Register, FR 55, p. 14556 (April 18, 1990) and the revised Chapter 8 (worker protections) of those guidelines published at Federal Register FR 55, P.39873 (Sept. 28, 1990).

SECTION II. ADMINISTRATION

a. **Administrator**: The Administrator of the Environmental Protection Agency shall delegate to the respective states the administration of the regulations promulgated in accordance with Section I.

b. **Interagency Coordination**: The Administrator of the Environmental Protection Agency may, through appropriate formal agreements, delegate to other Federal agencies the enforcement of specific regulations promulgated in accordance with Section I. Such agreements shall be subject to public review and comment prior to their implementation.

c. **Consultation**: The Administrator of the Environmental Protection Agency shall consult with other agencies of the Federal government with respect to the promulgation and enforcement of regulations established by Section I. Such agencies shall include the Occupational Safety and Health Administrator, the Mine Safety and Health Administration, and the Departments of Housing and Urban Development, Transportation, Health and Human Services, Defense and Energy.

SECTION III. LEAD ABATEMENT RESEARCH

a. **National Institute of Environmental Health Sciences**: The Director of the National Institute of Environmental Health Sciences shall conduct a program of basic and applied research to identify, characterize, and quantify risks to human health from exposure to lead, and to develop treatment protocols to reduce the detrimental effects of the full range of exposures to lead in children and in adults.

The Director of the National Institute of Environmental Health Sciences shall provide a report to the Congress in two years on:

i) recent research results on the health effects of lead exposure on children and adults.

ii) current treatments for lead poisoning and other therapies intended to reduce the effects of lead exposures.

iii) future research needed to fill gaps in the understanding of the health effects and treatment of lead exposure.

NOTE: **THIS SECTION ON NIEHS SHOULD BE ADDED TO SECTION 407 OF S.391.**

b. **National Institute for Occupational Safety and Health**. The National Institute for Occupational Safety and Health shall conduct a comprehensive program for the prevention of hazardous occupational lead abatement exposures. The research program shall include the following:

i) development of surveillance and intervention capability in the states to identify and prevent hazardous exposures to lead abatement workers.

ii) development and demonstration of lead abatement control technologies and/or work practices to identify and prevent hazardous lead exposures in the work place.

iii) evaluation of health effects of low and high levels of occupational lead exposures on reproductive, neurologic, renal, and cardiovascular health.

iv) identification of high risk occupational settings for which prevention activities should be targeted.

v) a study to assess the potential exposures and risks from lead to janitorial and custodial workers.

NOTE: **THIS SECTION ON NIOSH SHOULD REPLACE SECTION 407(i))(2) of S.391**

SECTION IV. TRAINING GRANT PROGRAM

a. **Grant Purposes:** Grants for the training and education of workers who are or may be directly engaged in lead abatement activities shall be made under this subsection.

b. **Administration**: Grants under this subsection shall be administered by the National Institute for Occupational Safety and Health ("NIOSH").

c. **Grant Recipients**: Grants shall be awarded to non-profit organizations engaged in lead abatement activities with demonstrated experience in implementing and operating worker health and safety lead abatement training and education programs and with a demonstrated ability to reach and involve in lead training programs target populations of workers who are or will be directly engaged in lead abatement activities. Grants shall be awarded only to those organizations which fund at least 30 percent of their lead abatement training programs from non-federal sources (not including in-kind contributions) and commit to continue the training program with 100 percent non-federal funds after the expiration of the authorization.

SECTION V. DEFINITION -- LEAD ABATEMENT ACTIVITIES

a. For the purposes of Sections I-IV, lead abatement activities means activities engaged in by workers, supervisors, contractors, inspectors and planners engage in the removal, disposal, handling, inspection and transportation of lead-based paint and materials containing lead-based paint from public and private dwellings, public and commercial buildings, bridges, and other structures or superstructures where lead-based paint presents or may present an unreasonable risk to health or the environment.

\2240.00

STATEMENT OF THE
NATIONAL ASSOCIATION OF REALTORS®
ON H.R. 2840
SUBMITTED TO THE
SUBCOMMITTEE ON HEALTH AND THE ENVIRONMENT
HOUSE COMMITTEE ON ENERGY AND COMMERCE
JULY 26, 1991

INTRODUCTION

Thank you for the opportunity to present our views on H.R. 2840, the "Lead Contamination Control Act of 1991," and the issues surrounding the problem of lead in the indoor environment.

The NATIONAL ASSOCIATION OF REALTORS® is comprised of more than 800,000 members involved in all aspects of the real estate industry. While we do not support all of the concepts contained in H.R. 2840, we feel that it provides a starting point to stimulate discussion among the affected parties concerned with the overall lead problem. We look forward to working with this Subcommittee and the Congress to fashion a workable solution to address the serious health problems facing our nation's children as a result of their exposure to lead.

The NATIONAL ASSOCIATION OF REALTORS® strongly believes that every individual should have the opportunity to live in safe and decent housing where risks to health from pollution are minimized. We are committed to supporting efforts to identify and reduce the potential health threat that lead may pose, while at the same time protecting the value and salability of homes, as well as, the stability of the marketplace.

We further support increased education of all homeowners about lead so that they will become aware of, and motivated to test for, potential health hazards. Homeowners contemplating

645

the sale of their homes should also recognize their responsibility to disclose to real estate brokers or agents, and to potential purchasers, lead hazards that present a significant risk to health.

Notwithstanding, we believe lead should be viewed as a public health issue and that legislative and administrative efforts should be broadly directed at the general public, rather than focused on the real estate transaction.

LEAD HAZARD INSPECTION TIED TO THE POINT OF SALE OF PROPERTY

The rationale behind the sections of H.R. 2840 dealing with lead hazard inspection and disclosure is that the real estate transaction process is the most logical place to alert homeowners to hazards posed by lead in the home environment. While at first glance that may appear true, the facts show the opposite.

The Department of Housing and Urban Development (HUD) has estimated that of the 77 million privately owned and occupied homes built before 1980, 57 million contain lead based paint. Of these 57 million, an estimated 9.9 million are occupied by families with children under the age of 7. Of those 9.9 million, 3.8 million pose "priority hazards" in that they have non-intact paint and/or lead dust. This 3.8 million represents 6.7 percent of the 57 million homes with lead based paint.

Approximately 3.4 million homes are sold annually, and an estimated 3 million of those homes were built prior to 1980. Of those 3 million, 74 percent (2.2 million) can reasonably be expected to contain lead based paint. Expressed as a percentage of the total 57 million homes containing lead, that 2.2 million estimated turnover figure represents a 3.8 percent annual transaction-based testing and possible abatement rate, assuming all homes with lead based paint are actually abated.

In addition, of the 2.2 million home sold annually that contain lead based paint, we can assume that 6.7 percent (148,000) represent those with "priority hazards" and children under the age of 7.

If the goal is truly to alert those at risk, tying testing to the transaction process is not the most effective way of doing so. Assuming that in an average year there are 3.4 million home sales in the United States, in a perfect world it would take approximately 25 years to turn over the 57 million homes at risk. And that 25-year figure is misleading since some homes may turn over more often, and the fact that the 3.4 million sales per-year includes homes built after 1980, which aren't covered, as well as previously-occupied homes. In other words, relying upon the home transaction process to alleviate the problem will be a very long, slow process and more importantly, will leave another generation of America's children at risk.

At this Subcommittee's April hearing on lead in the indoor environment, many Members took the Environmental Protection Agency (EPA) to task for the fact that they were allowing municipal water systems up to 20 years to comply with the new lead in water standards. Yet, if this legislation is enacted in its current form, it will take that long, if not longer, to ultimately test every home in America for lead based paint and related lead hazards.

Congress needs to develop a faster, more reliable method to identify both the homes at greatest risk and those with children under the age of 7. Reliance on the home transaction process to force Americans to test their homes is a scattershot, inefficient approach to the problem.

ECONOMIC IMPACT ON HOUSING VALUES AND AFFORDABILITY

The major concern which the NATIONAL ASSOCIATION OF REALTORS® has with H.R. 2840 is the potentially devastating effect it will have upon housing prices and home sales across the nation. While we grant you that no one can, or is implying that you can put a price upon the lost intellectual capacity of a child caused by lead exposure, the fact remains that this legislation will have a detrimental effect on a real estate market that has already suffered a precipitous decline, with serious impact on the nation's banking system.

HUD estimates that the average cost per-unit to remove lead is $7,700 with a range between $5,500 to $12,000. This cost reflects neither the cost of testing, estimated at $375, nor the relocation expenses that may be incurred in cases where it would not be safe for the family to remain in the home during the abatement process. This time can be as much as three to four weeks for a 3-bedroom home. Granted, some costs may decrease somewhat over time if the lead inspection and deleading industry attains certain economies of scale. But nonetheless, the cost will still be steep for the average American family.

For many of these families, the money they have invested in their home is their biggest source of savings and investment. In fact, many Americans rely on the eventual sale of their home to provide retirement income or to provide some inheritance for their children.

We should also not forget that the cost of lead testing and possibly abatement, if called for during the real estate transaction, will impact the affordability of a home, and particularly affect lower income and first-time homebuyers, who are typically families with small children. If, as often happens, the seller and buyer split the cost of an average abatement ($7,700), the cost to the first-time home buyer would be $3,850. The NATIONAL ASSOCIATION OF REALTORS® estimates that a typical starter home is priced at $81,100, and that the potential first-time homebuyers typically only have 80% of the income necessary to purchase a such a home. In fact, these additional costs for testing, and possibly abating lead paint will no doubt price some of these first-time purchasers out of the market.

While H.R. 2840 does not mandate lead abatement, the practical effect will be to force many homeowners to delead in order to market the home, especially to potential buyers with small children. The cost of deleading does not increase the value of the property, and is therefore not recoverable and would reduce the potential selling price/value by the cost of the deleading. In other words, the seller will be left with the option of deleading or dropping the cost by the price of the deleading, which as we've seen can be upwards of $12,000.

Extrapolated over the 57 million homes in the country with some lead problems, the devaluation would seriously exacerbate an already beleaguered real estate market and the economy in general. In fact, a report by the Environmental Defense Fund estimates the cost just to abate lead hazards in the 24 million homes and apartments that most need it to be $240 billion!

This legislation also raises a fundamental issue of fairness. Why should the current homeowner bear the brunt of alleviating a condition he or she did not cause? In the case of older homes, it may have been the homebuilder or a previous homeowner, many times removed, who may have been the source of the problem by having the home painted with lead based paint. There is also the long-standing responsibility of the manufacturer of lead based paint. The paint manufacturer, the homebuilder or the previous homeowner who caused the problem could just as rightly be required to indemnify the current owner for some part of the deleading cost. Such a policy is utilized under Superfund law where the person responsible for contaminating a property with hazardous waste is required to finance the clean-up.

We are also concerned that, over time, large numbers of owners of homes with lead hazards may press for lower local tax assessments based on the lowered value of their home. While a reassessment would provide short term property tax relief for the affected homeowner, in areas with a preponderance of older homes, such as New England and the Midwest, the result may be an eroded tax base for already hard-pressed communities. The lower tax base will ultimately affect the delivery of local services, such as education, police and fire protection and the like.

MULTI-FAMILY PROPERTIES

The effects of H.R. 2840 would be even more dramatic on owners of multi-family properties. First, owners of lead-affected properties would be at a distinct marketing disadvantage in attracting families with small children, versus owners of post-1980 properties or pre-1980 properties without lead. If they decided to delead to increase the marketability of their apartments, the owners would be forced to increase rents to recover the cost of deleading. They would also have to absorb the cost of relocation of tenants from individual units during the abatement process. The cost of deleading a 2-bedroom apartment can run as high as $10,000.

Combined with the 1986 tax law reforms limiting passive losses on real estate activity, the expenses associated with lead testing and abatement may simply force marginally profitable landlords to sell their properties at a greatly reduced cost, hold on to their properties, thus delaying testing and abatement or, in extreme cases, abandon their investment altogether. This will be especially true in large urban areas where landlords are prevented from passing their deleading expenses along to renters due to rent control laws. Foreclosing on and marketing multi-family properties with lead hazards is certainly not something the already-strapped Resolution Trust Corporation (RTC) or the Federal Deposit Insurance Corporation (FDIC) are equipped to deal with.

In older, inner-city multi-family buildings with lead based paint problems, one should expect that there will be some loss of units due to abandonment or demolition. Removals or conversions of rental units to commercial is a prospect as well, depending on zoning and city government policies. Excessive code enforcement in the last decade has resulted in the removal of many downtown single-room occupancy hotels, which is one strong factor associated with homelessness. Certainly, lead based paint abatement will increase the prices of rental housing in the inner cities, with the greatest impacts on moderate to low-income renters. It is fair to assume that the worst impacts will be in the most depressed areas.

SELLER DISCLOSURE

The NATIONAL ASSOCIATION OF REALTORS® strongly supports the concept of mandatory seller disclosure, and we agree with the sponsors of H.R. 2840, that sellers, lessors and their agents should be required to notify potential buyers and lessees concerning all known lead hazards in the home or apartment. At our April 1991, Mid-Year meetings we adopted policy, "encouraging State Associations of REALTORS® to develop and support legislation or regulation requiring mandatory property condition disclosure by the seller."

Unfortunately, only two states, California and Maine, have enacted seller disclosure legislation to date. However, we are encouraged by the fact that several state legislatures considered similar legislation during 1991. Both Maine and California specifically include lead based paint on their mandatory disclosure forms. In addition, many of our state REALTOR® Associations have developed sample forms for REALTORS® to use in the interim. We have included some of these forms for your consideration (Appendix A). You will be pleased to note that they include lead based paint.

We would be very interested in working with this Subcommittee and Congress to develop incentives for states to expedite the process of adopting mandatory seller disclosure. The seller has the most intimate knowledge of his home and the disclosure requirement included in H.R. 2840 appropriately places responsibility on him or her.

TAX IMPACTS OF H.R. 2840

We realize that given the current federal budget deficit, it is impractical to expect the federal government to absorb the massive costs that lead abatement will generate. However, it is also unreasonable for the Congress to expect that this enormous financial burden can be absorbed solely by the private real estate sector in any reasonable period of time. In addition, we recognize the enormous costs the federal government already faces in abating lead in HUD, RTC and military housing properties.

Current Internal Revenue Service (IRS) practices provide a basis for treating the cost of lead abatement as a capital rather than an operating expense. As such the cost would be amortized over the life of the property, rather than expensed in the year the expense occurred. Legislative or regulatory changes would obviously be needed to permit lead abatement to be classified as a current operating expense, and deducted in the year the costs are incurred.

Congress should consider the use of incentives to motivate homeowners to test for lead hazards. As a means to that end, perhaps Congress could allow homeowners who itemize deductions on their federal income tax return to deduct the cost of lead testing and abatement with other medical deductions. Another option could be the development of lead tax credits, similar to energy tax credits, for testing and abatement of lead hazards. The Commonwealth of Massachusetts requires mandatory lead abatement at the point of sale for families with children under the age of 6 and offers homeowners tax credits for some of the lead abatement costs they incur.

Congress may also want to consider an excise tax on lead producers, pipe manufacturers and the companies that manufactured lead based paint prior to its prohibition in the Seventies, to help fund abatement for properties with high-priority lead hazards and children under the age of seven. Such actions would follow the precedents set in recent court-imposed settlements for claims against asbestos manufacturers. Some of the monies generated could also go to fund an aggressive screening program to facilitate early detection of the children most at risk. Current statistics would indicate that less than 5 percent of children aged 6 and under are currently screened for lead exposure.

LACK OF AN EXISTING LEAD ABATEMENT INFRASTRUCTURE

Another major impact that H.R 2840 will have on the real estate transaction is the disruptive effect of testing on a property before it can be sold. Homes containing excessively high levels of lead may have to be removed from the market entirely until an appropriate abatement strategy has been developed and completed.

In those areas of the country with a preponderance of older homes, it is becoming more common for a prospective buyer to request a lead test prior to closing. However, there is a significant dearth of qualified lead testing companies and deleading contractors in most of the United States. H.R. 2840 will literally require the creation of an extensive lead testing and abatement infrastructure. While the legislation allows for extensions for states without an adequate number of lead inspectors, we feel the legislation should also allow states extensions if there are not enough certified deleading contractors as well. In many cases, an inadequate abatement job can actually create more risks for the residents of a home than leaving the property as is.

Until an adequate lead inspection infrastructure is created, delays may occur when there are problems in obtaining or deploying testing equipment and ensuring an accurate and a timely laboratory analysis of the samples taken. These problems can be compounded if lead based paint is found and retesting and abatement is negotiated by the parties prior to the signing of a contract.

The federal government should carefully consider moving ahead, keeping in mind the controversy generated by the chemical Tris a number of years ago. In that case, the federal government required manufacturers to treat all children's sleepwear with the flame-retardant Tris. Only later was it discovered that Tris was a carcinogen, and the chemical was promptly banned -- after subjecting children to the danger of cancer and costing consumers millions of dollars.

The parallel to lead based paint is that hasty actions may have unintended consequences. Lead paint, like flammable sleepwear, is clearly dangerous. But the process of eliminating one risk may be even more dangerous than the proposed solution. A poorly performed lead abatement, as HUD reports, may increase the lead risks in a home.

The abatement industry is new and inexperienced. The demands placed on the industry may well strain the capacity of quality firms while attracting firms willing to do a quick job for a fast buck, while preying on parents' concern for their children. Licensure of firms may add to the problem. While keeping out abatement firms that may do a quality job, licensure will protect already existing firms from competition -- an incentive structure with generally undesirable outcomes, such as bribing inspectors and the emergence of black-market firms. These latter outfits may deceive a public that is generally ignorant of the potential hazards involved in lead abatement. As a result, thousands, perhaps millions, of dollars may be spent on shoddy abatement jobs across the country without a decrease in lead exposure or dangers. There simply must be some mechanism to police abatement firms so that such things do not occur.

PUBLIC EDUCATION

A public education program addressing lead hazards and the law's requirements, will be sorely needed to ensure that the situations noted above do not occur. We are glad to see that real estate agents are one of the groups included in this public education initiative. The

NATIONAL ASSOCIATION OF REALTORS® will do all it can to assist the federal government in raising the awareness of our membership and clients concerning this vital problem and we appreciate your assistance in this regard.

In this regard, we note that legislation has been introduced in the Senate, which calls for the lender to distribute brochures to potential purchasers on radon during the loan application process. It would not be an additional burden to include lead based paint as another major environmental hazards for homebuyers to be alert for. Assuming the Senate legislation is passed, it might be more appropriate to include the information called for in the lead disclosure statement in the brochure that would be mandated for distribution by lenders. This would alleviate the redundancy of having such information passed out by the real estate agent.

DUTIES OF REAL ESTATE AGENTS

Several factors will make it difficult for real estate agents to clearly understand and perform their functions regarding the presence of lead under H.R. 2840.

First, the legal obligation of a real estate agent to a customer relative to undiscovered or latent material defects of a property is usually, and more properly, established by state, not federal, law.

Second, the problem of lead is particularly difficult since testing is not yet standardized. Thus, even where the broker's legal duties can be specifically prescribed, satisfactory performance thereof may be inhibited by the difficulty of obtaining reliable test data or uncertainty in the proper use of such data in ascertaining the potential risks faced by a customer.

Finally, real estate brokers and sales people are employed to function as property marketing agents, not as experts in technical issues regarding the implications of environmental conditions such as lead . Thus, although licensed by the state to perform a marketing function, real estate agents may nevertheless be looked upon by prospective purchasers as a source, perhaps the only source, of environmental information and counsel, which the agent is ill-trained to provide.

In those instances where a broker has knowledge that lead hazards exist in a home, we recognize his obligation to disclose that fact to any prospective buyers. In some circumstances, it may be prudent, helpful or even legally or ethically necessary that a broker provide a buyer and/or seller with information regarding the possible presence of lead in a home, and the consequences which may result from extended exposure lead hazards. But in no case does or should the broker's legal or ethical duty go any further, since he is ordinarily not trained, nor required by law to be trained in technical matters such as lead discovery, abatement strategies, or health hazards. The broker is not a qualified source of professional guidance for a homebuyer regarding the risks attendant to lead in a particular home, even though buyers often may not properly evaluate and deal with those risks.

CONCLUSION

In conclusion, we appreciate this opportunity to present our views on this subject. While we have concerns about the implications H.R. 2840 could have on the affordability and availability of housing, we sincerely wish to work with the Congress, and other interested parties, to help lessen the risk to our nation's children from exposure to lead.

REAL ESTATE TRANSFER DISCLOSURE STATEMENT

(CALIFORNIA CIVIL CODE 1102, ET SEQ.)

CALIFORNIA ASSOCIATION OF REALTORS® (CAR) STANDARD FORM

(Appendix A)

☐

THIS DISCLOSURE STATEMENT CONCERNS THE REAL PROPERTY SITUATED IN THE CITY OF ______________ ______________, COUNTY OF ______________, STATE OF CALIFORNIA, DESCRIBED AS ______________.

THIS STATEMENT IS A DISCLOSURE OF THE CONDITION OF THE ABOVE DESCRIBED PROPERTY IN COMPLIANCE WITH SECTION 1102 OF THE CIVIL CODE AS OF ______________, 19____. IT IS NOT A WARRANTY OF ANY KIND BY THE SELLER(S) OR ANY AGENT(S) REPRESENTING ANY PRINCIPAL(S) IN THIS TRANSACTION, AND IS NOT A SUBSTITUTE FOR ANY INSPECTIONS OR WARRANTIES THE PRINCIPAL(S) MAY WISH TO OBTAIN.

I

COORDINATION WITH OTHER DISCLOSURE FORMS

This Real Estate Transfer Disclosure Statement is made pursuant to Section 1102 of the Civil Code. Other statutes require disclosures, depending upon the details of the particular real estate transaction (for example: special study zone and purchase-money liens on residential property).

Substituted Disclosures: The following disclosures have or will be in connection with this real estate transfer, and are intended to satisfy the disclosure obligations on this form, where the subject matter is the same: ______________

____

____

____

(LIST ALL SUBSTITUTED DISCLOSURE FORMS TO BE USED IN CONNECTION WITH THIS TRANSACTION)

II

SELLER'S INFORMATION

The Seller discloses the following information with the knowledge that even though this is not a warranty, prospective Buyers may rely on the information in deciding whether and on what terms to purchase the subject property. Seller hereby authorizes any agent(s) representing any principal(s) in this transaction to provide a copy of this statement to any person or entity in connection with any actual or anticipated sale of the property.

THE FOLLOWING ARE REPRESENTATIONS MADE BY THE SELLER(S) AND ARE NOT THE REPRESENTATIONS OF THE AGENT(S), IF ANY. THIS INFORMATION IS A DISCLOSURE AND IS NOT INTENDED TO BE PART OF ANY CONTRACT BETWEEN THE BUYER AND SELLER.

Seller ☐ is ☐ is not occupying the property.

A. The subject property has the items checked below (read across):

☐ Range	☐ Oven	☐ Microwave
☐ Dishwasher	☐ Trash Compactor	☐ Garbage Disposal
☐ Washer/Dryer Hookups	☐ Window Screens	☐ Rain Gutters
☐ Burglar Alarms	☐ Smoke Detector(s)	☐ Fire Alarm
☐ T.V. Antenna	☐ Satellite Dish	☐ Intercom
☐ Central Heating	☐ Central Air Conditioning	☐ Evaporator Cooler(s)
☐ Wall/Window Air Conditioning	☐ Sprinklers	☐ Public Sewer System
☐ Septic Tank	☐ Sump Pump	☐ Water Softener
☐ Patio/Decking	☐ Built-in Barbeque	☐ Gazebo
☐ Sauna	☐ Pool	☐ Spa ☐ Hot Tub
☐ Security Gate(s)	☐ Automatic Garage Door Opener(s)*	☐ Number of Remote Controls ________
Garage: ☐ Attached	☐ Not Attached	☐ Carport
Pool/Spa Heater: ☐ Gas	☐ Solar	☐ Electric
Water Heater: ☐ Gas	☐ Solar	☐ Electric
Water Supply: ☐ City	☐ Well	☐ Private Utility ☐ Other ________
Gas Supply: ☐ Utility	☐ Bottled	

Exhaust Fan(s) in ______________ 220 Volt Wiring in ______________

Fireplace(s) in ______________ ☐ Gas Starter

☐ Roof(s): Type: ______________ Age: ______________ (approx.)

☐ Other: ______________

Are there, to the best of your (Seller's) knowledge, any of the above that are not in operating condition? ☐ Yes ☐ No If yes, then describe. (Attach additional sheets if necessary.): ______________

____

____

B. Are you (Seller) aware of any significant defects/malfunctions in any of the following? ☐ Yes ☐ No If yes, check appropriate space(s) below.

☐ Interior Walls ☐ Ceilings ☐ Floors ☐ Exterior Walls ☐ Insulation ☐ Roof(s) ☐ Windows ☐ Doors ☐ Foundation ☐ Slab(s) ☐ Driveways ☐ Sidewalks ☐ Walls/Fences ☐ Electrical Systems ☐ Plumbing/Sewers/Septics ☐ Other Structural Components (Describe: ______________

____

______________)

If any of the above is checked, explain. (Attach additional sheets if necessary): ______________

____

____

____

*This garage door opener may not be in compliance with the safety standards relating to automatic reversing devices as set forth in Chapter 12.5 (commencing with Section 19890) of Part 3 of Division 13 of the Health and Safety Code.

Buyer and Seller acknowledge receipt of copy of this page, which constitutes Page 1 of 2 Pages.

Buyer's Initials (________) (________) Seller's Initials (________) (________)

Reprinted with permission, California Association of Realtors. Endorsement not implied.

Copyright© 1990, CALIFORNIA ASSOCIATION OF REALTORS®

525 South Virgil Avenue, Los Angeles, California 90020
IN COMPLIANCE WITH CIVIL CODE SECTION 1102.6 / EFFECTIVE JULY 1, 1991.

OFFICE USE ONLY
Reviewed by Broker or Designee ________
Date ________

BEST COPY AVAILABLE

C. Are you (Seller) aware of any of the following:

1. Substances, materials, or products which may be an environmental hazard such as, but not limited to, asbestos, formaldehyde, radon gas, lead-based paint, fuel or chemical storage tanks, and contaminated soil or water on the subject property. .... ☐ Yes ☐ No
2. Features of the property shared in common with adjoining landowners, such as walls, fences, and driveways, whose use or responsibility for maintenance may have an effect on the subject property. .... ☐ Yes ☐ No
3. Any encroachments, easements or similar matters that may affect your interest in the subject property. .... ☐ Yes ☐ No
4. Room additions, structural modifications, or other alterations or repairs made without necessary permits. .... ☐ Yes ☐ No
5. Room additions, structural modifications, or other alterations or repairs not in compliance with building codes. .... ☐ Yes ☐ No
6. Landfill (compacted or otherwise) on the property or any portion thereof. .... ☐ Yes ☐ No
7. Any settling from any cause, or slippage, sliding, or other soil problems. .... ☐ Yes ☐ No
8. Flooding, drainage or grading problems. .... ☐ Yes ☐ No
9. Major damage to the property or any of the structures from fire, earthquake, floods, or landslides. .... ☐ Yes ☐ No
10. Any zoning violations, nonconforming uses, violations of "setback" requirements. .... ☐ Yes ☐ No
11. Neighborhood noise problems or other nuisances. .... ☐ Yes ☐ No
12. CC&R's or other deed restrictions or obligations. .... ☐ Yes ☐ No
13. Homeowners' Association which has any authority over the subject property. .... ☐ Yes ☐ No
14. Any "common area" (facilities such as pools, tennis courts, walkways, or other areas co-owned in undivided interest with others). .... ☐ Yes ☐ No
15. Any notices of abatement or citations against the property. .... ☐ Yes ☐ No
16. Any lawsuits against the seller threatening to or affecting this real property. .... ☐ Yes ☐ No

If the answer to any of these is yes, explain. (Attach additional sheets if necessary.): ____________________

____

____

____

Seller certifies that the information herein is true and correct to the best of the Seller's knowledge as of the date signed by the Seller.

Seller ____________________ Date ____________________

Seller ____________________ Date ____________________

III
AGENT'S INSPECTION DISCLOSURE

(To be completed only if the seller is represented by an agent in this transaction.)

THE UNDERSIGNED, BASED ON THE ABOVE INQUIRY OF THE SELLER(S) AS TO THE CONDITION OF THE PROPERTY AND BASED ON A REASONABLY COMPETENT AND DILIGENT VISUAL INSPECTION OF THE ACCESSIBLE AREAS OF THE PROPERTY IN CONJUNCTION WITH THAT INQUIRY, STATES THE FOLLOWING:

____

____

____

Agent (Broker Representing Seller) ____________________ By ____________________ Date ____________________
(PLEASE PRINT) (ASSOCIATE LICENSEE OR BROKER SIGNATURE)

IV
AGENT'S INSPECTION DISCLOSURE

(To be completed only if the agent who has obtained the offer is other than the agent above.)

THE UNDERSIGNED, BASED ON A REASONABLY COMPETENT AND DILIGENT VISUAL INSPECTION OF THE ACCESSIBLE AREAS OF THE PROPERTY, STATES THE FOLLOWING:

____

____

____

Agent (Broker obtaining the Offer) ____________________ By ____________________ Date ____________________
(PLEASE PRINT) (ASSOCIATE LICENSEE OR BROKER SIGNATURE)

V

BUYER(S) AND SELLER(S) MAY WISH TO OBTAIN PROFESSIONAL ADVICE AND/OR INSPECTIONS OF THE PROPERTY AND TO PROVIDE FOR APPROPRIATE PROVISIONS IN A CONTRACT BETWEEN BUYER AND SELLER(S) WITH RESPECT TO ANY ADVICE/INSPECTIONS/DEFECTS.

I/WE ACKNOWLEDGE RECEIPT OF A COPY OF THIS STATEMENT.

Seller ____________________ Date ____________ Buyer ____________________ Date ____________

Seller ____________________ Date ____________ Buyer ____________________ Date ____________

Agent (Broker Representing Seller) ____________________ By ____________________ Date ____________________
(PLEASE PRINT) (ASSOCIATE LICENSEE OR BROKER SIGNATURE)

Agent (Broker obtaining the Offer) ____________________ By ____________________ Date ____________________
(PLEASE PRINT) (ASSOCIATE LICENSEE OR BROKER SIGNATURE)

A REAL ESTATE BROKER IS QUALIFIED TO ADVISE ON REAL ESTATE. IF YOU DESIRE LEGAL ADVICE, CONSULT YOUR ATTORNEY.

[illegible]

Reprinted with permission, California Association of Realtors. Endorsement not implied.

Copyright© [illegible] CALIFORNIA ASSOCIATION OF REALTORS®
[illegible] Avenue, Los Angeles, California [illegible]

Page 2 of ________ Pages.

OFFICE USE ONLY
Reviewed by Broker or Designee ________
Date ____________________

REAL ESTATE TRANSFER DISCLOSURE STATEMENT (TDS-14 PAGE 2 OF 2)

BEST COPY AVAILABLE

SELLER'S DESCRIPTION OF PROPERTY

REALTOR®

Property Address ______________________________

THE SELLER AUTHORIZES THE BROKERS OR SALESPERSONS TO PROVIDE THE FOLLOWING INFORMATION TO PROSPECTIVE BUYERS.

YES NO UNKN

I. TITLE/ZONING/BUILDING INFORMATION

1. Seller's name ______________________________
2. Owner's name (if different) ______________ How long occupied ________
3. Age of structure ______________ Number of occupants ______________

☐ ☐ ☐ 4. Do you know of title problems (for example, easements, use restrictions, lot line disputes, liens)? If yes, explain ______________________________

5. Zoning classification of the property ______________ Not known ______
6. Number of units/apartments permitted by zoning ______________ Not known ______

☐ ☐ ☐ 7. Do you know of zoning problems/violations? Explain ______________________________

☐ ☐ ☐ 8. Do you know of any variances or special permits? Explain ______________________________

☐ ☐ ☐ 9. Do you know of any building code or sanitary code violations? Explain ______________________________

☐ ☐ ☐ 10. a. Have you done any work which required building, plumbing, electrical or other permits? Describe ______________________________

☐ ☐ ☐ b. Were permits obtained?

☐ ☐ ☐ c. Was work approved by inspector? Explain ______________________________

☐ ☐ ☐ 11. Is property in flood plain or wetlands? Explain ______________________________

(See Flood Hazard Disclosure Clause, Section VII A.)

YES NO UNKN

II. RENTAL/CONDOMINIUM/COOPERATIVE INFORMATION

☐ ☐ ☐ 12. a. Is property subject to rent control, regulation or review?

b. If no, reason: Exempt _____ Decontrolled _____ None Applies __________ Other ________

Explain ______________________________

c. If yes, list maximum rents ______________________________

13. If rented, lease periods/tenancy at will ______________________________

rents ______________________________

14. If rented, owner is holding:

a. last month's rent; Amounts ______________________________

b. security deposit in escrow; Amounts ______________________________

☐ ☐ ☐ 15. If rented, has interest been paid on last month's rent/security deposit?

Date ______________ Amount ______________

16. If security deposit held, attach a copy of statement(s) of condition. Attached ___ Not attached ___

☐ ☐ ☐ 17. If converted to condominium/cooperative, was removal permit obtained?

☐ ☐ ☐ a. Has an advance payment been made to a condo reserve fund? If yes, how much? __________

Is reimbursement expected? Yes _______ No _______

YES NO UNKN

III. SYSTEMS/UTILITIES INFORMATION

DO YOU KNOW OF ANY CURRENT PROBLEMS WITH THE ITEMS LISTED?
ALSO EXPLAIN ANY REPAIR WORK WHICH YOU HAVE HAD DONE

18. a. Type of heating system ______________________________ Age ________

b. Has there ever been an underground fuel tank? If yes, location ______________

(See Hazardous Materials Disclosure Clause, Section VII. F.)

☐ ☐ ☐ 19. HEATING SYSTEM problems? Explain ______________________________

a. Identify any unheated rooms ______________________________

20. Type of Domestic Hot Water __________ Age __________

☐ ☐ ☐ 21. DOMESTIC HOT WATER problems? Explain ______________________________

22. Burners/Domestic Hot Water: Owned _______ Rented _______ If rented, from whom? __________

☐ ☐ ☐ 23. PLUMBING SYSTEM problems/leaks/freezing? Explain ______________________________

☐ ☐ ☐ 24. Bathroom ventilation problems? Explain ______________________________

25. Type of sewage system (sewer, septic, cesspool, etc.) ______________________________
Public _______ Private _______

26. If private, (a) Name of service company ______________________________

(b) Date last pumped ______________ Frequency ______________

☐ ☐ ☐ 27. SEWAGE SYSTEM problems? Explain ______________________________

28. Air Conditioning type: Central _______ Window _______ Other __________ None ________

☐ ☐ ☐ 29. AIR CONDITIONING problems? Explain ______________________________

COPYRIGHT © 1990 Seller's Initials __________ __________ Buyer's Initials __________ __________

MASSACHUSETTS ASSOCIATION OF REALTORS® 1 of 3

Copyright owned by MAR. Anyone wishing to reproduce any part of this document must contact MAR for permission.

BEST COPY AVAILABLE

YES NO UNKN

III. SYSTEMS/UTILITIES INFORMATION (cont.)

☐ ☐ ☐ 30. ELECTRICAL SYSTEM problems? Explain ______

31. Drinking Water Source: Public ______ Private ______ ; If private: a) well location ______
b) Flow rate (gals/min.) ______ ; c) Date last tested ______
Report attached ______ Not attached ______

☐ ☐ ☐ 32. Drinking Water Problems? Explain ______

☐ ☐ ☐ 33. APPLIANCES. Are all appliances which are being included in working order? Explain ______

☐ ☐ ☐ 34. Is electronic security system in working order? Explain ______

YES NO UNKN

IV. BUILDING/STRUCTURAL/IMPROVEMENTS INFORMATION

☐ ☐ ☐ 35. Foundation/slab problems/settling? Explain ______

☐ ☐ ☐ 36. Basement Water/Seepage/Dampness? Explain amount, frequency and location ______

☐ ☐ ☐ 37. a) Sump pump? If yes, age ______ location ______
☐ ☐ ☐ b) Is it in working order? Explain ______

38. Roof type ______ Age ______

☐ ☐ ☐ 39. Roof leaks, problems? Explain ______

☐ ☐ ☐ 40. Interior Walls/Ceiling problems? Explain ______

41. Type of floor under carpets/linoleum? ______

☐ ☐ ☐ 42. Floor problems? Explain ______

☐ ☐ ☐ 43. Chimney/Fireplace Problems? Explain ______
Date last cleaned ______

☐ ☐ ☐ 44. Wood/Coal Stove compliance with installation regulations/bylaws/code? Explain ______

☐ ☐ ☐ 45. Wood/Coal Stove Problems? Explain ______

46. History of fire/smoke damage? Explain ______

☐ ☐ ☐ 47. History of Termite/Insect/Pest Problems? Explain treatment and date ______
(See Chlordane Disclosure Clause, Section VII B)

☐ ☐ ☐ 48. Is house insulated? Type ______ Location ______

☐ ☐ 49. Has urea formaldehyde foam insulation (UFFI) ever been present? If yes, location ______
Installer/Manufacturer ______
(See UFFI Disclosure Clause, Section VII C)

☐ ☐ ☐ 50. Has air test for UFFI/formaldehyde been done? If yes, attach copy of report
Attached ______ Not Attached ______

☐ ☐ ☐ 51. Are asbestos-containing insulation or building materials present?
If yes, location ______
(See Asbestos Disclosure Clause, Section VII D)

☐ ☐ ☐ 52. Is lead paint present? If yes, location ______
(See Lead Paint Disclosure Clause, Section VII E)

☐ ☐ ☐ 53. Has test for Radon been done? If yes, attach copy (See Radon Disclosure Section VII G)

☐ ☐ ☐ 54. Other Building or Structural Problems? Describe ______

YES NO UNKN

V. MISCELLANEOUS INFORMATION

☐ ☐ ☐ 55. Water drainage problems? Explain ______

☐ ☐ ☐ 56. Swimming pool/jacuzzi problems? Explain ______

57. Identify any other hazardous materials at the property ______
(See Hazardous Materials Disclosure Clause, Section VII F)

58. Are you aware of any other information concerning any part of the land, or buildings on your property which might affect the decision of a buyer to buy or affect the value of your property or affect its use by a buyer? If so, describe ______

Copyright owned by MAR. Anyone wishing to reproduce any part of this document must contact MAR for permission.

Seller's Initials ______ ______ Buyer's Initials ______ ______

660

BEST COPY AVAILABLE

Copyright owned by MAR. Anyone wishing to reproduce any part of this document must contact MAR for permission.

VI. ADDITIONAL INFORMATION

VII. EXPLANATORY MATERIAL

The following clauses are provided for descriptive purposes only. For detailed information, consult the Massachusetts Department of Public Health, the Massachusetts Department of Environmental Quality Engineering, or other appropriate agency, or your attorney.

A. Flood Hazard Insurance Disclosure Clause (Question 11)
The lender may require Flood Hazard Insurance as a condition of the mortgage loan, if the lender determines that the premises is in a flood hazard zone.

B. Chlordane Disclosure Clause (Question 47)
Pesticide products containing chlordane were banned in Massachusetts on June 11, 1985, following a determination by the Department of Food and Agriculture that the use of chlordane may cause unreasonable adverse effects on the environment including a risk of cancer. Although existing data does not conclusively prove that significant health effects have occurred as a direct result of chlordane use, the long-term potential health risks are such that it is prudent public health policy according to the Department, to eliminate the further introduction of chlordane into the environment.

C. Urea-Formaldehyde Foam Insulation Disclosure Clause (Question 49)
The buyer acknowledges that he has been advised that Urea Formaldehyde Foam Insulation (UFFI) has been declared by the Massachusetts Department of Public Health (DPH) to be a banned hazardous substance and that new installation is prohibited. Where UFFI was previously installed, the seller is required to advise the buyer (1) where such UFFI is located and, if known, when it was installed, (2) a copy of test results concerning the air level of formaldehyde, and (3) a copy of information from the DPH concerning UFFI and formaldehyde levels. Under certain circumstances the cost of removal may be reimbursed. Exposure to hazardous levels of formaldehyde may cause personal injuries, including headaches, nausea or cancer. The buyer acknowledges that he has been advised to consult the DPH or his attorney for further information.

D. Asbestos Disclosure Clause (Question 51)
The United States Consumer Product Safety Commission has maintained that asbestos materials are hazardous if they release separate fibers which can be inhaled. Asbestos is a common insulation material on heating pipes, boilers, and furnaces. It may also be present in certain types of floor and ceiling materials, shingles, plaster products, cements and other building materials. The buyer may have the property professionally inspected for the presence of asbestos and if repair or removal of asbestos is desired, proper safety guidelines must be observed.

E. Lead Paint Disclosure Clause (Question 52)
Whenever a child under six years of age resides in any residential premises in which any paint, plaster or other accessible material contains dangerous levels of lead, the owner is required by law, to remove said paint, plaster or cover with appropriate materials so as to make it inaccessible to a child under six years of age. Consumption of lead is poisonous and may cause serious personal injury. Whenever such residential premises containing dangerous levels of lead undergoes a change of ownership, as a result, a child under six years of age will become a resident, the new owner is required by law to remove said paint, plaster or cover with appropriate materials so as to make it inaccessible to such child.

F. Hazardous Materials Disclosure Clause (Questions 18b; 57)
In certain circumstances Massachusetts law can hold an owner of real estate liable to pay for the cost of removing hazardous or toxic materials from real estate and for damages resulting from the release of such materials, according to the Massachusetts Oil and Hazardous Material Release and Response Act, General Laws, Chapter 21E. The buyer acknowledges that he may have the property professionally inspected for the presence of, or the substantial likelihood of release of oil or hazardous material and such proof of inspection may be required as a prerequisite for financing the property.

G. Radon Disclosure Clause (Question 53)
Radon is an odorless, colorless, tasteless gas produced naturally in the ground by the normal decay of uranium and radium. Radon can lead to the development of radioactive particles which can be inhaled. Studies indicate the result of extended exposure to high levels of radon may increase the risk of developing lung cancer.

H. Agency Disclosure
ALL BROKERS/SALESPERSONS REPRESENT THE SELLER, NOT THE BUYER, IN THE MARKETING, NEGOTIATING AND SALE OF THE PROPERTY, UNLESS OTHERWISE DISCLOSED. HOWEVER, THE BROKER/SALESPERSON HAS AN ETHICAL AND LEGAL OBLIGATION TO SHOW HONESTY AND FAIRNESS TO THE BUYER IN ALL TRANSACTIONS.

VIII. ACKNOWLEDGEMENTS

Seller(s) hereby acknowledge that the information set forth above is true and accurate to the best of my (our) knowledge. I (we) further agree to defend and indemnify the broker(s) (or any sub-agent of our broker) for disclosure of any of the information contained herein. Seller(s) further acknowledge receipt of copy of Seller's Description of Property.

Seller ______________________________ Date ______________

Seller ______________________________ Date ______________

Buyer/Prospective Buyer acknowledges receipt of Seller's Description of Property and Agency Disclosure. Buyer acknowledges that Broker has not verified the information herein and Buyer has been advised to verify information independently.

Buyer ______________________________ Date ______________

Buyer ______________________________ Date ______________

BEST COPY AVAILABLE

REALTOR®

EQUAL HOUSING OPPORTUNITY

SELLER'S DESCRIPTION OF PROPERTY FOR DISTRIBUTION TO SELLERS AND LISTING BROKERS INSTRUCTION SHEET

A. PURPOSE

The Seller's Description of Property is intended to supplement the usual listing information obtained by brokers and to assist the brokers in communicating information concerning residential property from the seller to prospective buyers. It is also intended to provide a measure of protection for seller and buyer ensuring that information concerning the condition of the property is communicated.

B. RECOMMENDED USE

It is recommended that the sellers fill in the form. **If the sellers are unsure of any factual information or about legal questions addressed by the form, the seller should check the "UNKN" (unknown) block. If items do not apply (e.g. security system) the seller should indicate "NA" (not applicable).**

Certain questions have been omitted, which apply only in limited locations (e.g. contamination of local water, overnight parking restrictions, proximity of nuclear power plants, etc.). If applicable, such information can be provided by sellers in the space provided for additional information (third page). **The inclusion or exclusion of information on this form is not intended to establish any obligation of the broker or seller to disclose such information. However, the Consumer Protection Act, Massachusetts General Laws Chapter 93A, obligates a broker to disclose property defects he/she is aware of which affect the property's value or may affect a buyer's decision to purchase.**

It is recommended that a copy of the form be retained by the sellers. Before a buyer signs an Offer to Purchase a property, it is suggested that the buyer be given a copy of the form. The parties may want to attach a copy of the form to the Offer or Purchase and Sale Agreement.

C. FREQUENTLY ASKED QUESTIONS

1. **Q.** WHAT IS THE PURPOSE OF THE FORM? WHY IS IT HELPFUL TO THE SELLER AND BROKER?

A. The form has been developed to get the best and fairest price for the seller's home and to protect sellers from claims that the condition of the property was misrepresented. The form deals with matters that are most frequently misunderstood by buyers and, therefore, become the source of claims. Rather than obtaining the information from the sellers orally, a written form reduces the risk that the information will not be accurately reported. Generally, buyers who are advised of problems are not discouraged by disclosures. Rather, it is the surprises which cause problems. **Sellers are not being asked to make representations when they are unsure of the accuracy of their responses, since all the sellers need do is explain their uncertainty or indicate "unknown" as the answer.**

2. **Q.** IF THE BROKERS HAVE QUESTIONS OR COMMENTS, WHOM SHOULD THEY CONTACT?

A. Questions, commments and feedback concerning the use of the form should be addressed to the Massachusetts Association of Realtors, P.O. Box 9036, Waltham, MA 02254-9036. Comments should be in writing so continued improvement and revision of the form will be possible.

Copyright owned by MAR. Anyone wishing to reproduce any part of this document must contact MAR for permission.

This form is intended for voluntary use by members of the Massachusetts Association of Realtors. Its use is not required, but is entirely discretionary.

BEST COPY AVAILABLE

nfpa
National Food Processors Association
1401 New York Ave., N.W.
Washington, D.C. 20005
202/639-5900
FAX 202/639-5932

TESTIMONY FOR THE RECORD

on H.R. 2840

THE REDUCTION OF LEAD IN THE ENVIRONMENT ACT OF 1991

The National Food Processors Association (NFPA) is the science-based association of the food industry whose 500 member companies manufacture the nation's processed-packaged fruits and vegetables, juices and drinks, meat and poultry, seafood, and specialty products.

During the past 16 years, the food industry has significantly reduced the potential for human exposure to lead through food products. This achievement is the result of a voluntary cooperative effort between the NFPA and the Can Manufacturers Institute (CMI). This effort involved the development of new can manufacturing technologies for metal containers including development of the two-piece container (with no side seam), the welded side seam three-piece container and the tin soldered three-piece container. These developments required commitment of significant resources by container manufacturers. Conversion to full scale production of two-piece and welded containers required replacement of existing can manufacturing lines with new equipment and a commitment by the food processing industry to purchase the new containers as they became available. Economics dictated that new containers be sized to fit existing can filling and closure equipment to reduce conversion costs for the food processing industry and thereby encourage more rapid utilization of the technology. Changes in the configuration of some of the new cans required extensive testing to assure the continued safety of thermally processed foods.

WASHINGTON, D.C. • DUBLIN, CALIF. • SEATTLE, WASH.

The dramatic results of this national effort are illustrated by an 86% reduction in the average level of lead in canned food products and an overall reduction in the use of lead-soldered cans from 90.3% of total domestic production in 1979 to just 3.07% in the first quarter of 1990. These statistics clearly illustrate the willingness and the ability of the industry to respond to concerns about the safety of the food supply. The food industry is now completing the final step voluntarily to eliminate the manufacture and use of lead-soldered cans within the United States. Based on information provided by our members, NFPA and CMI understand that the food processing industry will cease the production, packing, and distribution of foods in lead-soldered containers by the end of July, 1991. This applies both to domestic production and to canned foods imported by our members. Our joint membership represents about 90-95% of total domestic canned food production.

Lead levels in canned foods now are approaching background levels for lead present in the environment. In addition, lead levels in most products are below the limit of quantitation for existing analytical methodology. More sensitive analytical techniques can be expected to quantify extremely low levels of naturally occurring lead in food products. Thus, even the eventual elimination of all lead-soldered cans for food use will not yield significant additional reductions in lead exposure from foods.

H.R. 2840, Section 2828, would require that 12 months after enactment, a food product would be adulterated if it is packaged in a can or other container that contains solder or flux with any lead content. This would eliminate the use of lead-solder which, as we have noted, the U.S. food industry has voluntarily eliminated. However, the bill would also eliminate the use of tin solder containing any detectable lead. This would eliminate the production and use of any three-piece containers using tin solder as all tin solder will contain minute quantities of lead. Current industry specifications for tin solder used for food containers establish a maximum lead content of 0.05% lead in the tin solder with most product in the 0.02% to 0.03% range. This is the lowest level achievable with currently available technology. Such overly stringent measures would eliminate the only material available for three-piece containers, and are unnecessary for the protection of public health, since exposure is minimal.

The bill also would classify a food product as adulterated if it bears or contains any lead. Virtually all foods contain minute quantities of lead absorbed from the soil, water or air, while grown in the field. Lead is ubiquitous in the environment and can be expected to be found with more refined analytical methods which detect and quantify lead content at the part per billion level. As a practical matter, this minute exposure to naturally-occurring lead is not a threat to human health, therefore, it is unnecessary to classify food products as adulterated within the meaning of the Federal Food, Drug, and Cosmetic Act.

We hope the Subcommittee will give serious consideration to these comments. The food processing industry, along with the can manufacturing industry, has made significant progress in reducing human exposure to lead through food products and is prepared to take, in concert with FDA, the additional steps required to protect human health.

RE-CAP

Recyclers of Copper Alloy Products

300 West Washington Street, Suite 1500
Chicago, IL 60606
Phone: (312) 236-2713
FAX: (312) 236-8772

365 Main Street
Nashua, NH 03060
Phone: (603) 889-2233
FAX: (603) 886-1700

RECYCLERS OF COPPER ALLOY PRODUCTS (RE-CAP)

CHAIRMAN
Allan B. Silber

VICE CHAIRMAN
Dale Peters

SECRETARY
Joe Mayer

TREASURER
Philip B. Bowman

LEGAL COUNSEL
John W. Wilmer, Jr
Vorys, Sater,
Seymour and Pease

Chairman Waxman, members of this distinguished subcommittee, my name is Allan B. Silber and I am the Chairman of the Recyclers of Copper Alloy Products (RE-CAP). In addition to my representation of RE-CAP, I am the Vice President of a small ingot manufacturing plant in New Hampshire, which my grandfather started 90 years ago. I also serve as President of the Brass and Bronze Ingot Manufacturers and as Vice-Chairman of the U.S. Department of Commerce's and U.S. Special Trade Representative's Industrial Sector Advisory Committee on Non-Ferrous Metals and Ores.

On behalf of the members of RE-CAP, I appreciate the opportunity to present to this Subcommittee our perspective on the issues important to our industry that are raised by H.R. 2840.

Before I continue, let me describe very briefly the nature of the organization I speak for. RE-CAP is a coalition of associations whose members throughout this century have played a critical role in the closed loop recycling of secondary metals. Our members include the American Foundrymen's Society, American Pipe Fittings

Association, Brass and Bronze Ingot Manufacturers, Copper and Brass Fabricators Council, Copper & Brass Servicecenter Association, Copper Development Association, Institute of Scrap Recycling Industries, and the Non-Ferrous Founders' Society. In addition, RE-CAP also works closely with a number of other organizations, including the Plumbing Manufacturers Institute, although they are not formal members of the RE-CAP coalition.

RE-CAP's members cover a broad range and include copper and wrought copper alloy producers, scrap dealers, ingot manufacturers, and non-ferrous foundries. These industries depend upon one another for economic survival. For example, scrap dealers collect and process used automobile radiators and other copper alloy scrap, including old faucets, for sale to ingot manufacturers. They melt the scrap and alloy it to exacting specifications. The alloy typically will include large quantities of copper. The copper alloy ingots are sold to non-ferrous foundries, who then cast the ingot into brass and bronze plumbing components that are subsequently machined (and in some cases polished, buffed and plated) to achieve their final configuration for the faucet manufacturers.

The production of quality ingot metal alloys is not a simple melting process, but is a fully developed, carefully supervised, and scientifically controlled refining process. When an article of copper or copper alloy has served its initial purpose or is no longer fit for service, such as an automobile radiator, it is ready to be converted into something else useful. The metal value is continually present in such discarded equipment, even though the equipment is worthless as such. Although copper does not last forever in any one form, it is continually being recovered, refined, realloyed, reworked and otherwise used again.

This closed loop recycling process has been a national success story for nearly a century in this country. At least 4 billion pounds of brass and related copper alloys are recycled annually in the United States. In fact, nearly all of the brass used by the American plumbing fittings industry comes from these recycled metals. This successful recycling effort means that for each and every ton of recycled copper:

-- Tons of metals are not introduced into our ecosystems;

-- Thousands of pounds of valuable metals are not cast off into landfills;

-- Acres of land are conserved and not ravaged to expose the minerals below the surface; and

-- Substantial energy savings are achieved.

To manufacture the literally thousands of copper alloy products that meet a broad range of consumer, industrial, and military needs, it is important that carefully-specified percentages of lead be used with the large quantities of copper already present. Leaded copper alloys:

- -- Improve machinability;
- -- Are less subject to failure when exposed to very hot or very cold fluids;
- -- Are spark-resistant and therefore fire-reducing;
- -- Are pressure tight because the lead fills the microvoids in the cast structure;
- -- Are corrosion resistant as proven over a century of use;
- -- Have low sound conductance; and
- -- Are self-lubricating to lower the friction coefficient in moving or sliding surfaces.

With respect to brass and bronze plumbing fittings, it is important to emphasize that virtually no virgin metal is introduced r used in manufacturing these products; they are the end product which results from recycling scrap metal. The faucet you use today may have been made from the faucet which your grandfather used as a child. And your faucet eventually will become the scrap from which these and other copper alloy products are made.

Accordingly, and given the interdependence of the industries represented by RE-CAP, any significant disruption to this closed-loop recycling process -- whether legislative or regulatory in nature -- will have tremendous and perhaps unintended consequences downstream in the manufacturing process. It is for precisely this reason that RE-CAP has been vigilant in educating the Congress as to the nature of our business and active in trying to help draft legislation that does not unintentionally drive our members out of business and would deny consumers **proven** quality and sanitary plumbing products for their homes.

With this background in place, Mr. Chairman, I wish to emphasize that RE-CAP shares the health-oriented goals of your legislation and commends both you, Congressman Sikorski, and the other members of this Subcommittee for bringing this issue to such national prominence. While we have strong reservations with respect to the current language on plumbing fittings contained in H.R. 2840, we intend to continue our work with your subcommittee staff in a good faith attempt to craft a mutually acceptable solution on this issue.

We also wish to emphasize that several research and development initiatives are underway which seek to control or limit the levels of lead leachate into drinking water supplies from brass and bronze plumbing fittings. Some of these include:

-- Sodium Acetate Wash. With the assistance of researchers at the University of Florida, research is underway with respect to a sodium acetate wash process which may be able to selectively remove lead from the surface of brass, thereby reducing the potential for lead leachate;

-- Plating. Research on plating the inside surface of brass fittings; and

-- Waterway Surface Reduction. This involves research into shrinking the diameter of brass waterways to reduce the surface area from which lead could leach.

The problems with these and other projects, like all exploratory R & D efforts, are that the time required for adequate scientific testing, the practicability of commercial application, and the technological and economic feasibility of the projects are largely unknown factors. Thus, although preliminary results in several instances appear promising, time is necessary to complete these and other important projects. Consequently, legislative or regulatory initiatives must take into consideration the feasibility of our interrelated industries being able to comply, and likewise should be very careful not to interfere with the closed loop recycling which these industries use in manufacturing brass and bronze fittings.

Some current legislative and regulatory scenarios under active consideration, for many of reasons already stated, run the risk of:

- Crippling the critical plumbing fittings market for a wide range of copper alloy industries;
- Precipitating plant shutdowns and unemployment across the country;
- Threatening the supply of non-ferrous castings for a wide variety of domestic and military products;
- Triggering mass consumer irritation;
- Spawning a significant increase in imports whose alloy content will be unenforceable as a practical matter; and
- Jeopardizing the current productive use of millions of pounds of scrap which is annually recycled by the members of RE-CAP.

With respect to the provisions of H.R. 2840 which relate to plumbing fittings, RE-CAP believes them to be both impossible to comply with and a prescription for the economic devastation of the plumbing fittings industries if enacted as currently drafted.

Looking specifically at that section of H.R. 2840 which deals with plumbing fittings which amends Section 1417 of the Public Health Service Act (the Safe Drinking Water Act; 42 U.S.C. 300g-6), a number of significant problems become apparent. To begin with, it is simply not possible for industry to meet a requirement of 10 parts per billion (ppb), particularly given the time frame specified (four years from the date of enactment) and the testing protocol outlined in the legislation.

The fact that certain elements of the testing protocol to be utilized by the U.S. Environmental Protection Agency (EPA) are specified in the legislation causes RE-CAP considerable concern, particularly because the protocol delineated is so different from that now being utilized by either the agency or by industry in general. Test protocol should not be mandated via legislation, and should have solid scientific basis in fact. RE-CAP is not aware of any generally accepted testing protocol that recognizes or utilizes the methodology outlined in H.R. 2840. The test protocol issue will be explored in greater detail by the Plumbing Manufacturers Institute, which has been working closely with the National Sanitation Foundation and state and federal regulatory personnel to develop a workable protocol for product certification.

Another significant concern with H.R. 2840 is with the 10 ppb requirement being applied to water at the tap. Given the background level of lead in drinking water in the distribution system up to the hookup to a private residence, this bill is effectively placing an even lower requirement than 10 ppb on plumbing fittings.

In the short period since H.R. 2840 was introduced, I have begun to receive input from major manufacturers which consistently point to the unworkable, infeasible and ambiguous standards and protocol which would established by this legislation.

One company stated that there was absolutely no way that they could meet the 10 ppb standard today using the protocol called for by H.R. 2840. This company estimated that at the best, and only **if** current R & D efforts underway prove successful **both** in the laboratory and in a commercial production setting, perhaps within eight years such a standard **may** be achievable. The cost to attempt to do so, however, was almost impossible for them to calculate without knowing which technology, if any, would be available for them to achieve this standard.

Likewise, a second company stated that not one of their products would meet the requirements of H.R. 2840. This company went on to say that the practical business effect of H.R. 2840 would be for them to attempt to move toward other raw materials that are generally not able to withstand the commercial rigors of current marketplace uses. Moreover, the cost associated with retooling, altering other manufacturing processes, and securing these new materials approached something in the range of $20-30 million for this company alone. The result would be increased consumer cost and a poor quality product, and a distinct prospect that this major company would not be able to survive.

Similarly, another company stated that its fabricated products would not meet the 10 ppb requirement and was unable even to estimate the cost of attempted compliance because it is not known what technology would be employed.

A fourth company, echoing the general concerns expressed by the first three, stated flatly that they would simply cease further capital investment and gradually phase-down operations rather than even attempt to comply with what they regarded as astronomical costs to achieve an impossible statutory requirement. For them, the absence of any proven technology (with an open-ended cost associated with it to implement), coupled with the short time frame for compliance, would simply create an unworkable environment.

Conclusion

We cannot compromise beyond the plumbing fittings provisions contained in § 391, the "Lead Exposure Reduction Act of 1991." For almost a year we have worked with Senator Reid's Subcommittee on Toxic Substances, Environmental Oversight, Research and Development. After considerable discussion, our members have agreed to accept the plumbing fitting provisions in S. 391, as reported on April 17, 1991 by that Subcommittee. This language already puts the industry beyond what can be achieved with known technology and materials. The industry cannot agree to commit suicide by going further at this time. However, it will continue to develop the very lowest lead leaching products possible as new proven technology is available.

S. 391 as reported strikes a sensible and workable balance which should result in continued recycling and reduced leaching of the minimal amount of lead arising from brass and bronze plumbing fittings, without precipitating a devastating total restructuring of the brass and bronze plumbing fittings industry and its upstream suppliers of recycled secondary metals.

The provisions in S. 391 direct EPA to promulgate a standard. S. 391 keeps pressure on EPA by directing that the standard be promulgated within a short time frame. Should this not occur, S. 391 requires that the percentage of lead in plumbing alloys be reduced to 50% below the 8% level set forth in H.R. 2840.

Thus, if your subcommittee concludes that your bill must include a provisions which addresses plumbing fittings, we urge your subcommittee to incorporate the provisions set forth in S. 391.

○